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## MANUAL DE FORMAÇÃO

**Operador/a de Logística**

COMPONENTE DE FORMAÇÃO

Língua Inglesa - Logística

ÁREA DE COMPETÊNCIA CHAVE

Cidadania e Empregabilidade

UNIDADE DE FORMAÇÃO

0402

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## ENQUADRAMENTO

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## Objetivos do manual

O presente manual de apoio à aprendizagem tem por objetivo constituir um complemento aos conteúdos programáticos abordados em sala no âmbito da unidade de formação integrada no curso em referência.

Os objetivos pedagógicos, conteúdos programáticos e carga horária estão de acordo com o referencial da unidade de formação.

Pretende constituir-se como um suporte de consulta, aprofundamento e sistematização dos conhecimentos dos seus utilizadores relativamente às temáticas abordadas na unidade de formação.

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## Objetivos pedagógicos

### Objetivos gerais

Utilizar a língua inglesa como instrumento de comunicação de forma autónoma.

Proporcionar uma ferramenta complementar, que seja uma mais-valia a nível profissional, que permita ao formando o acesso a um leque mais amplo de oportunidades laborais.

Poder comunicar nos diversos âmbitos profissionais (administrativo e comercial), com recurso às ferramentas proporcionadas nos diferentes módulos e cujo fim visam um desenvolvimento adaptado e adequado às situações profissionais específicas.

### Objetivos específicos

No que concerne a competências específicas, visa-se que no término deste módulo, o formando tenha a capacidade de:

- Identificar trabalhos logísticos e suas atividades regulares;
- Caracterizar serviços de logística, através da distinção de siglas de logística, reconhecimento e apuramento de gamas de produtos;
- Trabalhar a logística e gestão da cadeia de fornecimento através do uso de uma empresa de terceiros na distribuição e atendimento de serviços;
- Administrar processos logísticos, usando terminologia apropriada e trabalhar dentro das diretrizes alfandegárias próprias;
- Gerir um inventário, por intermédio de uma série de processos com múltiplas funções, referentes ao acompanhamento, manuseamento e gestão de materiais em stock;
- Utilizar o reabastecimento contínuo, como ferramenta que tem por finalidade repor os produtos na gôndola de forma rápida e adequada à demanda, com os objetivos de minimizar stocks e faltas;
- Reconhecer a funcionalidade das redes sociais para ofertas de trabalho;
- Utilizar o transporte de materiais e cargas, armazenamento e manuseio dentro da norma regulamentadora estabelecida, garantindo a saúde e integridade física do trabalhador;
- Constatar que cada carga tem requisitos específicos e existem vários tipos de contentores disponíveis, que são desenhados especialmente para a mercadoria a transportar;
- Nomear diferentes tipos de mercadoria, requisitos específicos de transporte e tipo de transporte disponível;
- Saber como fazer a cotação para transporte de carga, tendo em conta o tipo de carga, tributos incidentes sobre a carga e o serviço e fluxo de remessas realizadas;

- Ter conhecimento sobre as mercadorias de envio, contemplando marcações, carregamento, assessoria de embarque e instruções de envio;
- Diferenciar armazenagem de armazenamento, englobando equipamento de manuseamento e áreas de armazém nos dias de hoje;
- Comunicar problemas de armazenamento e propor soluções adequadas;
- Inteirar sobre os trâmites de documentação e finanças: documentação do comércio externo, instruções de importação e métodos de pagamento;
- Comunicar efetivamente em inglês, numa panóplia de situações, inclusive com expedidores, agentes de expedição e expedidores aduaneiros;
- Gerenciar a equipa de logística usando terminologia adequada para cada situação.

## Conteúdos programáticos

O presente manual, de suporte à unidade de formação, apresenta a seguinte estruturação em termos de conteúdos programáticos:

- **Apresentação – (Duração 1 Hora)**
  - Apresentação do Formador e dos Formandos
  - Apresentação do programa do curso: objetivos pedagógicos, conteúdos programáticos, metodologias de formação e metodologias de avaliação.
  
- **Tema I - Introduction to logistics – (Duração 3 Horas):**

**Topics:**

  - Setting the scene
  - Jobs in logistics
  - Regular activities

**Language:**

  - Describing jobs
  - Talking about regular activities
  
- **Tema II - Logistic services – (Duração 3 Horas):**

**Topics:**

  - Logistics acronyms
  - Product ranges
  - 3PL providers
  - Value-added services

**Language:**

  - Selling services
  - Explaining online services
  
- **Tema III - Inventory management and procurement – (Duração 3 Horas):**

**Topics:**

  - Inventory management
  - Continuous replenishment
  - Job advertisements

**Language:**

  - The passive
  - Giving and asking for opinions
  - Making suggestions
  - Agreeing
  
- **Tema IV - Modes of transport – (Duração 3 Horas):**

**Topics:**

  - Transport and handling equipment
  - Container types
  - Types of goods

**Language:**

- Adjectives
- Making comparisons
- Describing features

- **Tema V - Planning and arranging transport – (Duração 3 Horas):**

**Topics:**

- Transport options
- Measurements
- Quotations

**Language:**

- Making enquiries and requests
- Advising and offering alternatives
- Numbers, dimensions, and weight

- **Tema VI - Shipping goods – (Duração 3 Horas):**

**Topics:**

- Markings
- Loading
- Advice of shipment
- Shipping instructions

**Language:**

- Explaining how to do something
- Prepositions
- Talking about shipping problems

- **Tema VII - Warehousing and storage – (Duração 3 Horas):**

**Topics:**

- Handling equipment
- Warehouse areas
- Warehousing today

**Language:**

- The passive with modals
- Talking about improvements
- Describing a process

- **Tema VIII - Documentation and finance – (Duração 3 Horas):**

**Topics:**

- Documents in foreign trade
- Import instructions
- Payment methods.

**Language:**

- Apologising
- By and Until
- Handling payments
- Dealing with mistakes

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## INTRODUÇÃO

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## Introdução

Perante a necessidade de relacionamento profissional com cidadãos que dominam outros códigos linguísticos, torna-se imperativo o domínio da Língua Inglesa, por parte de todos os que fazem parte da Comunidade Europeia. O inglês é o idioma usado como ferramenta de comunicação entre diferentes nacionalidades, com a finalidade de gerenciar processos complexos e desafiadores de Logística Global. Isso faz do inglês uma habilidade inestimável para todos os níveis de Gestão da Cadeia de Suprimentos e Logística. As sessões de formação “Inglês Logística” serão feitas sob medida a contemplar necessidades específicas, tendo como principal ferramenta o seu formador de inglês, que irá orientar e criar ferramentas para desenvolver aptidões no idioma, por meio de discussões, dramatizações, desenvolvimento de vocabulário, análise de idiomas e feedback frequente.

Módulo destinado a quadros e funcionários que pretendem melhorar as suas capacidades linguísticas para uma participação mais ativa e eficaz em assuntos relacionados com logística.

O inglês para logística foi desenvolvido especificamente para pessoas que trabalham, ou querem trabalhar no setor da logística e que precisam do inglês para comunicar numa variedade de situações com colegas, clientes e parceiros de negócios. Ele fornece vocabulário de destino e expressões comumente usadas, que são essenciais para a comunicação, quer você trabalhe para um expedidor, expedidor aduaneiro ou transitário de cargas.

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## DESENVOLVIMENTO

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## 1. Introduction to Logistics

Logistics is the management of the flow of goods, information and resources between the point of origin and the point of consumption. It is a business concept that evolved during the 1950s due to the increasing complexity of supplying businesses with materials and transporting products in an increasingly globalized supply chain. The complexity led to a call for experts in the process who are called logisticians.

Logistics can be defined as “having the right item in the right place, at the right time, in the right quantity, at the right price and in the right condition, for the right customer”.

There are two fundamentally different forms of logistics: one optimizes a steady flow of materials through a network of transport links and storage areas, while the other coordinates an effective sequence of resources in order to carry out a project.

Work in logistics involves the integration of information, transportation, inventory, warehousing, material handling, packaging, human resources and sometimes security. The goal is to manage the life cycle of a project from birth to completion. For example, a logistician would have to ensure that the supply chains work so that raw materials and/or parts arrive at a factory or on site in time and in the correct order. It would be very inefficient and wasteful if the roof tiles were delivered before the foundations have been dug and the walls built on a construction site, or, if large quantities of paper were delivered to a printer who had nowhere clean and dry to store it. These are very simple examples of an extremely complex and detailed process.

The main functions of a qualified logistician include inventory management, purchasing, transportation, warehousing, consultation and organizing and planning of these activities. Logisticians combine a professional knowledge of each of these functions to coordinate resources in an organization.

### 1.1. Jobs in Logistics

“Trade isn’t about goods. Trade is about information. Goods sit in the warehouse until information moves them.”

*C. J. Cherryb, Writer*

The management of logistics is perhaps the “face” of supply chain management, concerned as it is with the actual **movement of materials, goods** and just as important, but rarely mentioned, **information**. Jobs in logistics can range from manual, such as warehouse operatives and

truckies, through clerical, like transport administration, supervisory and managerial, to senior management positions.

Let's focus on the knowledge-work aspect of logistics. After all, if you are graduating with a degree or planning a mid-career move into the supply chain profession, you probably won't want to go in on the shop floor. That said, logistics is undoubtedly a sector in which you can do so and from there, go all the way to the top. I know people who have done that, and the experience proved invaluable when they moved into senior positions.

***You could consider any of the following jobs in logistics and transportation:***

- Logistics Administrator
- Logistics Manager
- Transport Administrator
- Transport Manager
- Reverse Logistics Manager
- Warehouse Administrator
- Inventory Controller
- Warehouse Manager
- Logistics Director

Each of the positions listed above can eventually lead to promotions into more general supply chain management roles. **Chief Supply Chain Officers**, for example, have often spent time managing warehouses or transport operations in their early careers.

A typical career path might involve entering the profession as a manager of a small transport operation or single warehouse, then moving into a regional or group management role, before progressing to a senior management appointment, perhaps running a nationwide warehouse or transport network.

Further progression could ultimately take you into a more general field of supply chain management. The most successful logisticians pursue executive offices, and some even go on to become CEOs.

## **1.2. Regular Activities**

Logistics is also known as Physical **Distribution** management. Logistics is an activity carried out by many different companies for the physical distribution of **goods**. **FMCG**, **consumer** durables, and many other industries regularly manufacture goods. These goods have to be transported to the distributors and **dealers** and lastly to the end consumer. Logistics is the means to transport the goods from the company to the middlemen or the end consumer.

However, Logistics does not mean “transport” only. There are many different logistics activities or functions of logistics which are used by a company.

**For example** – If you have to deliver a good from your warehouse to a dealer, then you need to adjust the inventory that you have in your warehouse (because goods are leaving). Similarly, you need to have entries that the goods have left from your warehouse and reached the dealer. In between, you also need to ensure that goods are handled in the appropriate manner and they reach in the desired condition to the dealer. If there are any returns from the dealer, they have to be accounted too.

From the above example, we can understand there are many logistics activities which have to be taken care of 6 such functions of logistics are discussed in this text.

### **1.2.1. 6 Logistics activities or 6 Functions of logistics in an organization**

#### **1.2.1.1. Logistics activities or Functions of Logistics**

- **Order processing**

The Logistics activities start from the order processing which might be the work of the commercial department in an organization. The commercial department is the one who ensures that the payment terms and the delivery terms have been met and then processes the order from within the company.

Basically, the commercial team accepts the order from the customer and places the order to the warehouse. If the customer has given the payment, a commercial team makes the entry into the system and tells the warehouse that the customer has given an order of 10 units so the warehouse **needs** to deliver 10 units.

In many companies, the entry from commercial also deducts the inventory in the warehouse. So if the commercial team has given the go-ahead for a purchase order of 10 units, the available inventory will automatically be deducted by 10 units so that double ordering does not happen. This is an important step in logistics activities because any mistake in this step (wrong entries of quantity, delivery address etc) can affect the whole logistics process.

- **Materials handling**

Material handling is the movement of goods within the warehouse. It involves handling the material in such a way that the warehouse is able to process orders efficiently. Although it may sound a mundane task, it is an important one and an ongoing activity in any warehouse.

For a small shop with 100 **products**, it is very easy to move one **product** from one place to another. But IF this small shop was not sure WHERE the products are kept, the shopkeeper will have to search for the order and the product every time he receives the order. He will have to search this in all the 100 products that he has and then he will have to move the other products so that he can give the ordered product to the customer.

Now multiply this scenario by 100 times. Warehouses of large companies are sometimes half a mile or more in size. Imagine the amount of material stored in the warehouse. If the warehouse manager does not know where the material is stored and how he is going to bring it to the dispatch center of the warehouse, he will be in big trouble and his productivity and **efficiency** will take a big hit. That is why materials handling is an important function of logistics.

Arranging material within the warehouse properly so as to allow easy movement and dispatch material is an important activity in logistics management. This becomes more important as the warehouse grows in size. **Amazon**, for example, uses the combination of robotics, AI, and humans for material handling. It is estimated that Amazon ships 16 lakh package a day. Which is equal to 70,000 packages every hour. Imagine the **confusion** if Amazon did not employ the best material handling equipment and **strategies**.

- **Warehousing**

If we take the example of **LG** or **Samsung**, these are consumer durable companies which are present in multiple countries. Their manufacturing might be at one point, but the distribution is all across the world. Thus, warehousing plays a huge role and is one of the important Logistics activities.

The important point in warehousing is that the warehouse should be nearby to the dealer or the distributors' place and it should facilitate the easy delivery of goods. If there was a product which was from a branded company, but which takes 1 week to deliver, then this product might not move as much in the **market** as another product which is taking 2 days to deliver even though it is unbranded.

Thus, it makes sense for the branded company to have a closer warehouse so that can immediately deliver the goods. Once a **brand** establishes itself in a new territory, the first thing it does is to lease a new warehouse so that It can be closer to the territory and closer to the end customers.

The location of warehouses also reduces the pressure on mother warehouse (large warehouses which stock most of the products). When there is a peak in **demand** or if there is a drop in production, these warehouses can take the pressure of deliveries and they can become interdependent to ensure delivery of goods to consumers.

- **Inventory control**

If a firm has 100 units of a product in stock, but the demand is only of 10 units, then the company has uselessly invested in 90 units. This is money which can be used as a **working capital** and it is money on which banks are applying interest.

On the other hand, another firm had a demand of 500 units, but they have manufactured only 200 units thinking that demand will be less. Now they have lost the orders which is an **opportunity** cost. The perfect firm will be one, which has manufactured 100 units, knows there will be 50 units of demand and is ready even if demand doubles. But they are continuously monitoring the demand and are ready for it without investing much in manufacturing.

With the above example, you understood the importance of Inventory control in Logistics activities. Inventory management is one of the most important functions of logistics especially after the adoption of various production techniques such as Just in time manufacturing, **lean manufacturing** or other manufacturing processes where the cost of inventory management is brought down.

- **Transportation**

Now we come to one of the major logistics activities which is one of the most resources heavy and revenue heavy segment of logistics. There is a single reason that transportation is costly – Fuel. Be it petrol, Diesel or gas, fuel is costly, and it is mostly consumed in transportation activities. This is why companies spend lakhs to control the transportation expenses because it is one of the highest **variable expense** to any company.

Transportation involves the physical delivery of goods from the company to the distributor or dealer and from the dealer to the end customer. Generally, companies are involved only till the point delivery happens to the distributor or the dealer. The distributor is then responsible for the delivery to the end customer. However, transportation is a cost to the dealer as well and reduces his profit – due to which the company has to give higher profits to the dealer – to negate his costs.

The better the warehousing and the inventory management of a company, the lower is the transportation cost for the company. **Economies of scale** play a major role in the cost-effectiveness of transportation. FMCG adopted “breaking the bulk” method to reduce the cost of transportation and also to improve functions of logistics as a whole.

- **Packaging**

There are two types of packaging – One which the customer sees on the shelf of supermarkets or hypermarkets where the package appears attractive and makes the customer buy the packages. The other is transport packaging where the products are packed in bulk so as to avoid any

breakage or spillage and yet allow them to transfer huge volumes of the product safely from one place to another.

Packaging the product is a responsibility of the logistics team because otherwise the product will reach damaged to the end customer and this is a huge cost to the company. This is why, especially in export **markets**, a huge amount is spent in the packaging of the product. The packaging may cost only 1-2% of the value of the product, but if it is not right during transportation, it will result in 100% cost due to the damage and loss of the product.

The above were all the functions of logistics and the logistics activities which have to be taken care of in any major company. Management looks at logistics in two different ways.

Here is a Video on Logistics and **Supply** Chain Management

In one way, management looks at logistics as interdependent systems. So, transportation may be one system and warehousing may be other. In this case, the cost of systems as individuals is controlled and they are calculated as **individual** costs in the books of accounts.

In other management styles, possibly where the products are large and robust and not small units, the management considers logistics as a whole and it is given its own individual header in the books of accounts. The different logistics activities are clubbed together as one cost and the cost is brought down as the whole.

## 2. Logistic Services

A business that deals with selling products and services have to figure out a way to deliver them to customers. If the products and services are provided and sold online, then also they have to determine a way where the products move from one point to another through particular shipping services and logistics services.

If you are a single person operator then you might prefer the post office for the shipping services. However, at a certain point in time, you will want to upgrade to a better shipping process and ultimately opt for a shipping provider. When your business will eventually grow further, you will face more complexities while dealing with shipments through multiple carriers daily.

This is the point where the logistics providers come for the rescue. They are specially trained individuals who specialize in handling the shipment procedures for your enterprise. They help you to coordinate your products in their expected destinations in an efficient way.

Many procedures lay between the manufacturing of the product to the final stage of delivering it to the customers. Firstly, the products will be sent to the warehouse where it needs to wait for its order to be placed. The product spent some considerable amount of time in the warehouse or it can also be ordered as soon as it reaches the warehouse.

The next step that follows is to arrange for the most suitable means of transport for delivering the products to the postal carriers or retailers. The retailers or postal carriers in return delivers the product to customers. Whatsoever, transportation is a tricky process that has many elements to it. The important being the weather conditions. If the weather conditions are not favourable, then it can disrupt the whole transportation process, which in turn can bring about huge losses to the company.

The main purpose of the logistics services is to oversee all these matters. They coordinate transportation services and keep the products flowing smoothly. For instance, if a particular client does not have many products to fill the entire truck, the logistics service providers strategically combine one customer's shipments with another customer's shipments, so that the truck can be fully utilized. This also avoids certain delays in the deliveries. Many logistic services company has come a long way within the years to provide the best services for your company.

## 2.1. Types of logistics services

Mainly three types of logistics services are commonly used. The logistics industry is widely spread and it contains a vast range of services that have a direct impact on how the products are delivered from the maker to the particular recipients. It does not matter where your business lies in between the shipment and production lines, it is always better to have that feel from how your products are getting from one point to another. Here we will discuss various types of logistics that influences the production processes:

- **Warehousing services**

The product is typically held at a warehouse or is consecutively transported through various warehouses before it is shipped. Many companies prefer their warehouses; whereas many companies work hand in hand with third-party logistics service providers. They tend to receive ship and store out products on behalf of their clients.

These help in eliminating the cost of paying for a complete warehouse. Although warehousing is a very flexible and non-complex aspect of the field, still it has certain elements that make the situation critical. The storage you require will determine the dynamic of space that your products need, the time aspects of your need for space, how easily your products are accessible, and many more.

- **Freight shipping**

Large items and large orders are mostly shipped with the help of freight shipping. This includes a combination of particular vehicles like ships, trains, cargo, trucks, and many more. Freight services also include drayage services that enable your order to be transported from ports to particular warehouses for storage.

Just like warehousing, freight shipping is also full of complexities and involves constant fluctuations in labour shortages, demands, shipping timings, and many more. It is the logistics provider's job to see that the products are delivered timely no matter what the situation is or what circumstances the company is facing. These enable the brand loyalty and customer loyalty to remain constant.

- **Courier shipping**

Courier shipping is one of the most popular shipping services opt by the company. Shipping companies like UPS, FedEx, etc. are very popular now. Courier service is mostly availed for smaller orders and for the products that are very fragile and require extra care during delivery. Courier services

have a faster pace than freight shipping. The reason is very simple that is courier services take care of the smaller orders, not large scales of items. Many retailers tend to reserve the courier services for the last step when the particular product reaches directly to the intended customers from the warehouse.

### 2.1.1. What is logistics management?

Logistics management is one of the essential elements of supply chain management that used to fulfil customer needs and demands by planning, controlling, and executing this effective movement. Logistics management is the management of the complete flow of goods and their particular services.

It provides full information on the complete movement of raw materials, and other respective activities in inventory. Logistics management plays an important role in running your supply chain smoothly. It also tracks movement, location, and the status of the inventory. Logistics management helps organizations to cut out their expenses and enable better customer service. By adhering to the customer requirements and the standards laid by the industry, the logistics management provides implementation, planning, and strategizing.

## 2.2. Logistics Acronyms

The logistics industry moves fast whether you are a **3pl company**, **trucking company** or a **client**. Every year that goes by it seems that a new acronym or abbreviation is created to short hand terms used everyday to conduct business.

Every profession has its own acronyms, and they're a great way of quickly communicating a profession-specific phrase or reference. The logistics and supply chain profession are certainly no exception to this, so it will explain more than 50 of the most common and in regular use in supply chain and logistics acronyms in use in the UK today.

### 3PL: Third-Party Logistics Provider

A provider of outsourced logistics services, predominantly referenced to **transport** and warehouse providers who supply and/or manage logistics resources on behalf of their clients. Well-known **3PLs** include DHL, XPO, Kuehne + Nagel and Ceva.

#### **4PL: Fourth Party Logistics Provider**

A 4PL is usually a non-asset based ‘organiser’. A 4PL orchestrates the alignment of resources and **technology of 3PLs** in order to provide a logistics service to an end client. In essence, they are the main contractor for the service provided.

#### **ABC (‘Analysis’ or ‘Classification’)**

Not actually an acronym, and not to be confused with Activity Based Costing. ABC refers to classifying products according to their sales volume, frequency, value, or strategic importance in order to **manage inventory levels effectively** or efficiently locate stock in a warehouse.

#### **AEO: Authorised Economic Operator**

**AEO** is an **internationally recognised status and quality mark for logistics operators**. AEO status confirms that the operator’s customs controls are standardised and compliant, and also gives the operator access to simplified customs procedures. There are two elements to AEO: operators can have Authorised Economic Operator Customs (AEOC) or Authorised Economic Operator Security (AEOS). When an operator has both of these, the general mark used is AEO.

#### **API: Application Program Interface**

In the context of logistics operations, **API** often references the **protocol for the interface between an ERP system and an operations management system** i.e. a Warehouse Management System (see WMS).

#### **APICS: American Production & Inventory Control Society**

**APICS’s** role is now somewhat broader than the acronym would suggest. **APICS** is a **professional association for supply chain management** and provides international research, education, and certification programs in supply chain management. It merged with the Supply Chain Council in 2014 and is still quite US-centric. However, it also operates through regional partners including the Chartered Institute of Logistics and Transport in the UK.

#### **ATO: Assemble-to-Order**

**ATO** is a **‘supply chain postponement’ strategy to minimise finished goods inventory**, reduce customer lead times, and allow for product customisation. This is achieved by holding component stocks and assembling those components into the finished product when the customer order is received.

### **B2B: Business-to-Business**

Sometimes referred to as a business strategy, but more closely fits with a **simple classification of the market that the business sells to** i.e. to other businesses (B2B) or consumers (see B2C).

### **B2C: Business-to-Consumer**

As with **B2B**, **B2C** is sometimes referred to as **a business strategy**, but is more a simple classification of the market that the business sells to.

### **BI: Business Intelligence**

A generic term for **a technology platform that enables data analysis and presentation of large volumes of information**. This information is usually derived from a company's Enterprise Resource Planning system (see ERP).

### **BOM: Bill of Materials**

The **BOM** refers to all the **material that is required to manufacture or assemble a finished product or component part**. Put simply, it's the product's ingredients.

### **CMILT: Chartered Member of the Institute of Logistics & Transport**

For election to the level of Chartered Member, members must either hold the Institute's Advanced Diploma or an exempting qualification such as an accredited degree, along with at least five years' relevant experience with a minimum of two years at a senior level.

### **COG: Centre of Gravity**

In logistics terms, **COG** refers to the **optimal geographic location**, usually of a Distribution Centre (see DC), where the inbound and outbound transport time, distance and/or costs are minimised. A COG analysis will usually consider both the inbound (supplier) and the outbound (customer) transport movements.

### **DC: Distribution Centre**

Put simply, a **DC** is a **warehouse that distributes goods outside of a company's internal supply chain** or to its retail estate. When a **warehouse** is used to support a company's internal manufacturing, it is usually referred to as a warehouse, not a DC.

### **EDI: Electronic Data Interchange**

**EDI** is the automated transfer of data between systems. In logistics, EDI is commonly referred to in the context of client Enterprise Resource Planning systems (see ERP) connecting with the Warehouse Management Systems (see WMS) of 3rd party logistics providers (see 3PLs).

### **EOQ: Economic Order Quantity**

The **EOQ** is a calculation of the optimal quantity of goods to purchase in order to minimise carrying costs and ordering costs. It is sometimes known as the Wilson formula and was devised in the early 20th century. The original formula for EOQ is now widely recognised as ineffective for modern supply chain management, as the advent of technology means the cost of ordering is negligible (compared to the early 20th-century ordering processes that required higher levels of staffing).

### **ERP: Enterprise Resource Planning**

**ERP** refers to a software platform that allows a company to use a series of integrated software modules to manage their business. Modules within the ERP will usually include supply chain, manufacturing, finance, and human resources among others. The most common ERP systems in the UK are SAP, Infor, IFS, and Oracle.

### **FCILT: Chartered Fellow of the Institute of Logistics & Transport**

Chartered Fellow is the highest grade of Institute membership and requires at least seven years' experience in a relevant position of high responsibility within the logistics industry.

### **FCL: Full Container Load**

**FCL** is a container shipping term. Contrary to the term, it does not necessarily indicate a full container, but rather a container with only one shipment for a single destination. Consequently, the container can be part-full and FCL just indicates that it has not been consolidated with other shipments.

### **FLT: Fork Lift Truck**

A generic reference to any type of forklift truck i.e. reach, counterbalance, sideloader, etc.

### **FMCG: Fast Moving Consumer Goods**

**FMCG** refers to high-volume, high-throughput consumer goods that are usually relatively low cost. This includes most food and drink products, and many of the products you will

find for sale in supermarkets. FMCG is most often a term used to classify a business sector as opposed to an individual product.

#### **IBP: Integrated Business Planning**

**IBP** is a relatively new term and is an evolution of **Sales & Operations Planning** (see S&OP). Whereas **S&OP** historically referred to balancing supply and demand by creating a consensus view between sales and operations, IBP expands on this approach by incorporating wider business functions such as finance and marketing.

#### **IDW: Irregular Dimension and Weight**

**IDW** is a term referring to products that may require specialist handling within the **logistics network** due to their size and/or weight. These types of products are also referred to as ‘ugly freight’ and include items such as kitchen worktops, mattresses, and some sanitaryware products. Specialist logistics providers in this sector include DX and Tuffnells.

#### **ISO: International Standards Organisation**

**ISO** is **an international non-government organisation** that develops international standards for products, services, and systems. In the logistics industry, ISO standards help facilitate efficiency by creating standard coding, identification, and marking of transit media such as shipping containers.

#### **KPI: Key Performance Indicator**

**A KPI** is **a quantitative measurement**, taken periodically, to ascertain business performance. KPIs within logistics vary widely but typically include inventory accuracy, inventory ageing, order picking accuracy, and dock-to-stock time.

#### **LCL: Less-than-Container-Load**

**LCL** is a **container shipping term** indicating that the volume of the shipment is less than a full container. LCL loads are usually passed to a consolidator who then fills containers with multiple shipments and separates at the destination port.

#### **LSP: Logistics Service Provider**

**LSP** is a term less commonly used for 3rd Party Logistics Providers (see 3PL).

### **LTL: Less-than-Truckload**

**LTL** is a road freight delivery that only requires a part of the vehicle's full capacity, but is greater than a parcel i.e. a pallet. In the UK, LTL is predominantly undertaken by pallet network providers. In the UK, LTL is also sometimes referred to as LTFL (Less Than Full Load).

### **LLOP: Low Level Order Picker**

Low-Level Order Pickers are powered pallet trucks where the forks are behind the driver. Often referred to in the warehouse as “Lollops”, they are used for picking from low levels in warehouses with fast-moving picking operations.

### **MAD: Mean Absolute Deviation**

**MAD** is a common measure of forecast accuracy. The calculation is relatively simple – it is the average variance between forecast and actual (with each variance expressed as an absolute number).

### **MAPE: Mean Absolute Percentage Error**

**MAPE** is the same forecast accuracy measure as Mean Absolute Deviation (see MAD) but expressed as a percentage. To calculate MAPE you calculate the average percentage variation between forecast and actual (with each variance expressed as an absolute).

### **MILT: Member of the Institute of Logistics & Transport**

Member of is the first grade of full membership of the Chartered Institute of Logistics and Transport (UK). To become a member usually requires at least 3 years' relevant experience and relevant professional qualifications.

### **MOQ: Minimum Order Quantity**

The Minimum Order Quantity relates to the minimum number of units a supplier will sell on a specific order. MOQs are usually introduced to avoid sub-optimal production runs, or to avoid cost inefficiencies in picking and transportation.

### **MRP: Materials Requirements Planning / Manufacturing Resource Planning**

**MRP** is a system, or set of procedures, to ensure sufficient material and resources are in place to manufacture against product demand. Usually, MRP processes relate to the order-book and a short-range forecast of up to 3 months. Beyond 3 months, horizon planning is undertaken at an aggregate level and is usually planned through a Sales & Operations Planning process (see S&OP).

### **MTO: Make-to-Order**

**MTO** refers to producing a product only when the customer order is received. This is efficient in terms of reducing finished goods inventory, but has potential impacts to resource levelling in manufacturing and increased lead times, compared with the customer buying from stock.

### **MTS: Make-to-Stock**

**MTS** refers to a product that is manufactured and placed into stock so it is readily available for customer orders. MTS indicates that there is a ‘decoupling’ point in the supply chain i.e. supply and demand are not synchronised, and consequently a stock buffer is required. Usually, an MTS product will have a set Reorder Point (ROP) and a manufacturing replenishment order will be made once the stock has reached the ROP.

### **NDC: National Distribution Centre**

As with a Distribution Centre (see DC), an NDC is a warehouse that distributes goods outside of a company’s internal supply chain or to its retail estate. However, the ‘National’ prefix implies that it also transfers goods to Regional Distribution Centres (see RDC).

### **OEM: Original Equipment Manufacturer**

**OEM** refers to a company that manufactures and supplies component parts that are then assembled into an end product by a separate company. For example, in the automotive industry, Magna supplies a range of component parts to Jaguar for its finished vehicles. In this context, Magna is considered an OEM.

### **POD: Proof of Delivery**

**POD** is the requirement for a logistics provider to be able to demonstrate, on request, that a delivery has been received by the intended recipient. POD is now commonly captured electronically, although paper-based systems are still in regular use by some smaller logistics providers.

### **RDC: Regional Distribution Centre**

As with a Distribution Centre (see DC), an RDC is a warehouse that distributes goods outside of a company’s internal supply chain or to its retail estate. The ‘Regional’ prefix usually implies that the RDC is part of a warehouse network and it is supplied from a National Distribution Centre (see NDC) in order to better service a local region.

### **RFID: Radio Frequency Identification**

**RFID** is a method of identifying and tracking products and assets within the supply chain. An **RFID tag** contains electronically stored data which is read by strategically positioned readers using electromagnetic waves. RFID is considered an evolution from bar code scanning as RFID tags and readers do not need to be within line of sight.

### **ROL: Reorder Level**

**ROL** is an inventory policy that dictates that a replenishment order is placed when the inventory reaches a predetermined level (see ROP – Reorder Point).

### **ROP: Reorder Point**

The **ROP** is the level that inventory must reach, or be forecast to reach, before a replenishment order is made within a Reorder Level inventory policy (see ROL). It is sometimes referred to as just OP (Order Point).

### **ROP: Reorder Period**

Where **ROP** refers to Reorder Period, it implies that the inventory policy is to replenish at regular intervals as opposed to when inventory reaches a certain level. The ROP is the frequency of replenishment i.e. daily, weekly etc.

### **ROQ: Reorder Quantity**

The **ROQ** is the number of items that need to be ordered to replenish an existing inventory. ROQ is used within both a ROL policy (see ROL) and a ROP policy (see ROP – Reorder Period).

### **S&OP: Sales and Operations Planning**

**S&OP** is a process, first conceptualised by Richard Ling in the 1980s, that facilitates supply and demand balancing on the mid-to-long-term planning horizon (usually 3 to 18 months). Its purpose is to ensure that sales requirements and operational resources are aligned and that all plans have consensus and harmonisation. It has now evolved to include wider business functions such as finance and marketing (see IBP).

### **SCOR: Supply Chain Operations Reference Model**

**SCOR** is a supply chain framework that links processes to performance metrics. SCOR focusses on 6 process areas that are referred to as ‘Level 1’; they are: Plan, Source, Make, Deliver,

Return, and Enable. SCOR was developed by management consultants in the 1990s and endorsed with the Supply Chain Council, which is now part of APICS.

### **SLA: Service Level Agreement**

A Service Level Agreement is a contract, or informal agreement, that defines the service required between a supplier and a customer. For the supply of physical products, it will usually include supply lead times, contingency arrangements, and customer support requirements.

### **SOP: Standard Operating Procedure**

SOPs within logistics are normally simple step-by-step instructions used to inform operational staff on how specific tasks should be undertaken. The aim of SOPs is to ensure conformity and efficiency in areas such as warehouse picking, vehicle loading, stock replenishment, etc.

### **SKU: Stock Keeping Unit**

A SKU is a physical item that has a unique set of attributes distinguishing it from any other item. For example, if a company sells A4 paper, then A4 paper may be the product family, but ‘A4 paper 80 gsm’ will be a SKU and ‘A4 paper 100 gsm’ will be a separate SKU. Separate SKUs can also be created where the same product is sold in varying pack configurations.

### **TMS: Transportation Management System**

TMS is a generic term for a system that enables planning, execution, and reporting of transport movements within the supply chain. TMS functionality can include route planning, vehicle tracking, and metrics reporting.

### **VMI: Vendor Managed Inventory**

VMI is where the vendor of a product agrees with the customer to maintain a level of inventory at the customer’s premises. The vendor is responsible for monitoring inventory levels at the customer’s premises and providing replenishment in line with the agreed inventory targets. VMI should not be confused with consignment stock, which is a stock at the customer’s premises that is owned by the vendor and isn’t paid for by the customer until it is consumed.

### **WIP: Work in Progress (or sometimes Work in Process)**

WIP is an inventory of goods that are not yet fully manufactured and consequently are still in progress.

## **WMS: Warehouse Management System**

**WMS** is a generic term for a system that **facilitates** the key warehouse fulfilment activities, from goods receipt to storage, picking, and despatch. The WMS will also manage sub-processes such as replenishment, inventory checks, resource management, and quarantine.

### **2.3. Product Ranges**

A company that has specialized in some set of products or services can provide with different variations of the products known as product range in order to appeal a large set of customers. Having a complete portfolio of products with enough variety in taste, size, colour or functionality will help the company attract different kind of customers and hence get a higher reach. There can be many reasons or situations in which company would like to expand its product line.

- **Some of those reasons can be:**
  - **Product Life Cycle:** In most cases, a product moves through four stages – Introduction, Maturity and Decline. When the product reached the maturity stage, company starts thinking about launching new variants to maintain the excitement among the customers or it will soon start to lose its customers to its competitors which have better functionalities.
  - **New Market Opportunities:** When there is an emerging opportunity in a market sector, a company will launch various product variants in order to match the customer needs.
  - **Customer Needs:** Introducing new products with emerging consumer needs. Getting customer insights and feedback through market research will help identifying those needs
  - **Customer Loyalty:** When a company wants to avoid the cost of acquiring new customers, it would launch new variants for the existing loyal customers.

**For example:** Apple launched various variants of iPod once it reached the Maturity stage to retain its loyal customers.

The range of products is the set of all types and kinds of products offered to customers by the company or any of its units. It can also be understood as a set of products offered by the entire industry. This range can be more or less specialized or generic. It is described by width, length, depth and consistency. Range of offered products should correspond to the expectations of target market of the company.

### 2.3.1. Product Range Width

Product range width means the quantity of offered product lines. A wide range describes large number of product groups (types of products including similar products that are intended for one segment of the market).

### 2.3.2. Product Range Length

It is the number of all products offered by the company in all product ranges.

### 2.3.3. Product Range Depth

It is number of different variants of the product, which the company offers in each product line. Deep range is one that provides a large selection of product variants (that is, products with a similar composition, technology, use, etc.) within one product line.

### 2.3.4. Product Range Consistency

The consistency describes how close are interlinked the various product lines of the company when it comes to distribution channels, and other characteristics. Consistent product range involves for example, several production lines including only consumer goods and their distribution through the same channels. The larger the differences between the lines of products, the consistency of the product range is smaller.

## 2.4. 3PL Providers

3PL is a service that allows you to outsource operational logistics from warehousing, all the way through to delivery, and ultimately enables you to focus on other parts of your business.

Third-party logistics companies provide any number of services having to do with the logistics of the supply chain. This includes transportation, warehousing, picking and packing, inventory forecasting, order fulfilment, packaging and freight forwarding. Wondering if your business needs to use a 3PL provider? When in doubt, use a pro-con list - we got started on one for you.

#### 2.4.1. What are the benefits of using a 3PL provider?

Using a 3PL provider offers lots of advantages. The biggest is that by handing over this logistics, you can focus on other aspects of your business such as sales, marketing and product development. Outsourcing 3PL leaves you with more time and resources. Here are a few other advantages:

- **Cost reduction.** 3PLs have more leverage with freight companies than individual shippers do. Working with carriers on behalf of multiple customers, 3PLs can negotiate pricing based on volume and order frequency. Using a **3PL to manage all or part of your supply chain** also gives you the freedom to invest in other key areas to grow and develop your business.
- **Scale up or down as needed:** Most businesses experience fluctuations in **demand** throughout the year. Using a 3PL allows you to manage peaks and troughs more effectively without having to commit to capital when you don't need to.
- **Provide a better customer experience:** Customers expect next-day or same-day shipping as standard. Using a third-party logistics provider allows you to offer fast shipping no matter where the order is being sent, thanks to having access to the 3PL's wide distribution network.
- **Test new markets:** With an international 3PL, you have the flexibility to test the waters in new markets without having to commitment to any major investments like your own warehousing space or staff.
- **Mitigate risk:** Shipping delays can and do happen for a number of reasons. When unforeseen circumstances pop up, a 3PL is responsible for making alternate arrangements to fulfil your orders as quickly as possible. You'll also be protected in the event of damage or loss of goods.
- **Gain instant expertise and knowledge in the field.** Especially if you're just starting out, who better to take care of your logistics than a company that specializes in them? Fulfilment, warehousing and shipping come with major challenges of their own, so handing it off to the experts can really make a difference in the way you function - and it leaves you to focus on increasing your overall value to your customers.
- **Get a handle on international logistics.** If you're selling internationally, 3PLs can take care of documentation, customs, duties and other issues that come up at the borders that can delay your shipments and result in high costs if not done thoroughly. Plus, you save time trying to work out complicated rules pertaining to different countries.

- **Generate cost savings.** When it comes to warehousing, not having to maintain your own space and staff can be a big cost-saving measure. Also, companies that provide good **inventory forecasting** can help optimize your inventory levels and save money on **inventory holding costs**.

#### 2.4.2. What are the cons of using a 3PL provider?

A 3PL isn't for every business. Here are a few drawbacks for you to consider. Would these impact your business?

- **Lesser control over the delivery process.** With a third-party taking care of your shipping, there can be challenges when there are delays or problems in shipping a customer's order. The customer will be looking at you for the resolution, not your 3PL.
- **Larger upfront investment.** On the flip side of the cost issue, while hiring a 3PL can pay for itself in the long run, the investment can still be a large cost in the beginning. If you don't need a big warehouse or don't have many orders, the cost of a 3PL can be prohibitive.
- **More distance between you and your product.** The 3PL you choose may position you far away from your products, which would be an inconvenience if you run into quality control issues, or need to physically inspect your stock for any reason.

#### 2.4.3. Which 3PL company is right for you?

Because of the sheer number of options, choosing a final provider can be an overwhelming process. On top of that, you must gather detailed information about the **real cost of 3PL** for your business.

Here are a few things for you to consider when choosing your 3PL partner:

**1. Current and forecasted volumes.** Choose a 3PL that can handle your current volume, but that also will be ready to handle your volume if you suddenly add a bunch of new stock, increase your stock volumes, or have a great spike in sales. You want to choose a 3PL that can handle your business now and handle it when you're at full speed!

**2. References and business performance.** Check out references from other customers that use the 3PL provider and get a report on the company's performance over the last few years. Seek out references and information about on-time deliveries versus delays, and how they

compensate businesses when there are problems. See what their customers are saying about them - customer case studies and quotes are a good indicator of how the 3PL provider has built and maintained the customer relationship.

**3. Compatible technology.** If you're using a cloud-based inventory management system, you should probably choose a company that is similarly cutting-edge and ready to integrate with your stock control software. Ensure that the 3PL provider's technology works with how you work.

## 2.5. Value-Added Services

Value Added Services is an industry term referring to non-core services. Examples in logistics include (and are not limited to) packaging services or the pick-up of the goods from the customer's premises.

The term "value-added" describes the economic enhancement a company gives its products or services before offering them to customers. Value-added helps explain why companies are able to sell their goods or services for more than they cost to produce. Adding value to products and services is very important as it provides consumers with an incentive to make purchases, thus increasing a company's revenue and bottom line.

Value-added could thus apply to instances when a firm takes a product that may be considered homogeneous—with few differences from that of a competitor, if any—and provides potential customers with a feature or add-on that gives it a greater perception of value. Adding a brand name to a generic product can be just as valuable as producing something new or in a way that no one has thought of before.

Value-added is the difference between the price of a product or service and the cost of producing it. The price is determined by what customers are willing to pay based on their perceived value. Value is added or created in different ways.

These may include, for instance, extra or special features added by a company or producer to increase the value of a product or service. The addition of value can thus increase either the product's price that consumers are willing to pay. For example, offering a year of free tech support on a new computer would be a value-added feature. Individuals can also add value to services they perform, such as bringing advanced skills into the workforce.

Consumers now have access to a whole range of products and services when they want them. As a result, companies constantly struggle to find competitive advantages over each other. Discovering what customers truly value is crucial for what the company produces, packages, markets, and how it delivers its products.

Bose Corporation, as an example, has successfully shifted its focus from producing speakers to delivering a "sound experience," or when a BMW car rolls off the assembly line, it sells for a

much higher premium over the cost of production because of its reputation for stellar performance, German engineering, and quality parts. Here, the additional advantage has been created through each brand's symbolic value and years of refinement.

- **Value-Added in the Economy**

The contribution of private industry or government sector to overall gross domestic product (**GDP**) is the value-added of an industry, also referred to as GDP-by-industry. If all stages of production occurred within a country's borders, the total value added at all stages is what is counted in GDP. The total value added is the **market price** of the final product or service and only counts production within a specified time period. This is the basis on which **value-added tax** (VAT) is computed, a system of taxation that's prevalent in Europe.

Economists can in this way determine how much value an industry contributes to a nation's GDP. Value-added in an industry refers to the difference between the total revenue of an industry and the total cost of inputs—the sum of labour, materials, and services—purchased from other businesses within a reporting period.

The total revenue or output of the industry consists of sales and other **operating income**, commodity taxes, and inventory change. Inputs that could be purchased from other firms to produce a final product include raw materials, semi-finished goods, energy, and services.

- **Value-Added in Marketing**

Companies that build strong brands increase value just by adding their logo to a product. Nike can sell shoes at a much higher price than some of its competitors, even though their production costs may be similar. That's because the Nike brand and its logo, which appears on the uniforms of the top college and professional sports teams, represents a quality enjoyed by elite athletes.

Similarly, luxury car buyers considering a BMW or Mercedes-Benz are willing to pay a premium price for their vehicles because of the brand reputation and ongoing maintenance programs the companies offer.

Amazon has been a force in the e-retail sector with its automatic refunds for poor service, free shipping, and price guarantees on pre-ordered items. Consumers have become so accustomed to its service that they are willing to pay for Amazon Prime memberships because they value the free two-day turnaround on orders.

Value Added Services are also called premium services. Many logistics services companies do not restrict themselves to transporting goods, but offer their customers services like picking, packing and quality control.

Value Added Services (VAS) are usually exactly tailored to the wishes and needs of the customer. In most cases, it is an effort to create a more efficient supply chain. But there are other VAS in logistics that are not about optimising the supply chain.

- **Supply chain optimisation with VAS**

The whole supply chain can be optimized by Value Added Services. Logistics companies take on additional tasks apart from transport, handling and warehousing:

- assembly
- repairs
- packaging and re-packaging
- handling of return shipments and reclamations
- quality control
- shipment tracking

**There are also Value Added Services in the classic logistics tasks that logistics providers offer their customers:**

- Same Day Delivery
- On Board Couriers for urgent and sensitive shipments
- customs handling

- **Modular Value Added Services**

Value Added Services can be booked on top of a basic service in a modular way. This way a customer can get exactly the service he needs. For the service provider in logistics that means highly specialized offers, like offering a cold chain for frozen products.

### 3. Inventory Management and Procurement

As the global division of work is still increasing in all industries in order to improve speed, process integration and customer satisfaction there is a growing need for a modern sourcing system. Procurement and inventory management form the interfaces between different value chain members in today's product as well as service supply chains. As spending in procurement is often one of the biggest parts of a company's budget and accurately managing inventory offers cost cutting as well as service improvement potential, procurement and inventory management become integral to effectively managing any supply chain.

#### 3.1. Inventory Management

As a part of your supply chain, inventory management includes aspects such as controlling and overseeing purchases — from suppliers as well as customers — maintaining the storage of stock, controlling the amount of product for sale, and order fulfilment.

Naturally, your company's precise inventory management meaning will vary based on the types of products you sell and the channels you sell them through. But as long as those basic ingredients are present, you'll have a solid foundation to build upon.

Small-to-medium businesses (SMBs) often use Excel, Google Sheets, or other manual tools to keep track of inventory databases and make decisions about ordering.

**However, knowing when to reorder, how much to order, where to store stock, and so on can quickly become a complicated process. As a result, many growing businesses graduate to an inventory management app, software, or system with capabilities beyond manual databases and formulas.**

With these systems, the procedures of inventory management extend beyond basic reordering and stock monitoring to encompass everything from end-to-end production and business management to lead time and demand forecasting to metrics, reports, and even accounting.

##### 3.1.1. Retail inventory management

**Retail** is the broadest catch-all term to describe business-to-consumer (B2C) selling. There are essentially two types of retail separated by how and where a sale takes place.

- First, **online** retail (eCommerce) where the purchase takes place digitally.
- Second, **offline** retail where the purchase is physical through a brick-and-mortar storefront or a salesperson.

**Wholesale**, on the other hand, refers to business-to-business (B2B) selling. Knowing the differences and best practices of retail and wholesale is critical to success.

Most businesses maintain stock across multiple channels as well as in multiple locations. The diversity of retail inventory management adds to its complexity and drives home its importance to your brand.

### 3.1.2. Importance of inventory management

For any goods-based businesses, the value of inventory cannot be overstated, which is why inventory management benefits your operational efficiency and longevity.

From SMBs to companies already using enterprise resource planning (ERP), without a smart approach, you'll face an army of challenges, including blown-out costs, loss of profits, poor customer service, and even outright failure.

**From a product perspective, the importance of inventory management lies in understanding what stock you have on hand, where it is in your warehouse(s), and how it's coming in and out.**

**Clear visibility helps you:**

- Reduce costs;
- Optimize fulfilment;
- Provide better customer service;
- Prevent loss from theft, spoilage, and returns.

In a broader context, inventory management also provides insights into your financial standing, customer behaviours and preferences, product and business opportunities, future trends, and more.

### 3.1.3. Inventory management program

Before digging into strategies, techniques, and processes, let's take a look at some of the inventory management basics for beginners: namely, the terminology and formulas you'll need.

- **Inventory management terms**

- **Barcode scanner**

Physical devices used to check-in and check-out stock items at in-house fulfilment centres and third-party warehouses.

- **Bundles**  
Groups of products that are sold as a single product: selling a camera, lens, and bag as one SKU.
- **Cost of goods sold (COGS)**  
Direct costs associated with production along with the costs of storing those goods.
- **Deadstock**  
Items that have never been sold to or used by a customer (typically because it's outdated in some way).
- **Decoupling inventory**  
Also known as safety stock or decoupling stock; refers to inventory that's set aside as a safety net to mitigate the risk of a complete halt in production if one or more components are unavailable.
- **Economic order quantity (EOQ)**  
EOQ refers to how much you should reorder, taking into account demand and your inventory holding costs.
- **Holding costs**  
Also known as carrying costs; the costs your business incurs to store and hold stock in a warehouse until it's sold to the customer.
- **Landed costs**  
These are the costs of shipping, storing, import fees, duties, taxes and other expenses associated with transporting and buying inventory.
- **Lead time**  
The time it takes a supplier to deliver goods after an order is placed along with the timeframe for a business' reordering needs.
- **Order fulfilment**  
The complete lifecycle of an order from the point of sale to pick-and-pack to shipping to customer delivery.
- **Order management**  
Backend or "back office" mechanisms that govern receiving orders, processing payments, as well as fulfilment, tracking and communicating with customers.
- **Purchase order (PO)**  
Commercial document (B2B) between a supplier and a buyer that outlines types, quantities, and agreed prices for products or services.

- **Pipeline inventory**  
Any inventory that is in the “pipeline” of a business’ supply chain — e.g., in production or shipping — but hasn’t yet reached its final destination.
- **Reorder point**  
Set inventory quotas that determine when reordering should occur, taking into account current and future demand as well as lead time(s).
- **Safety stock**  
Also known as buffer stock; inventory held in a reserve to guard against shortages.
- **Sales order**  
The transactional document sent to customers after a purchase is made but before an order is fulfilled.
- **Stock keeping unit (SKU)**  
Unique tracking code (alphanumeric) assigned to each of your products, indicating style, size, colour, and other attributes.
- **Third-party logistics (3PL)**  
Third-party logistics refers to the use of an external provider to handle part or all of your warehousing, fulfilment, shipping, or any other inventory-related operation. Fourth-party logistics (4PL) takes this a step further by managing resources, technology, infrastructure, and full-scale supply chain solutions for businesses.
- **Variant**  
Unique version of a product, such as a specific colour or size.

### 3.1.4. Inventory management formulas

If you’re new to inventory, you’ll probably come across a lot of formulas that might seem confusing at first. However, with a little bit of homework, these formulas can be very useful for keeping stock levels optimized.

Here’s an overview of some of the most common inventory formulas...

- **Economic order quantity (EOQ) formula**

Your EOQ is the optimum number of products you should purchase to minimize the total cost of ordering or holding stock. Figuring out your EOQ can potentially save you a significant amount of money.

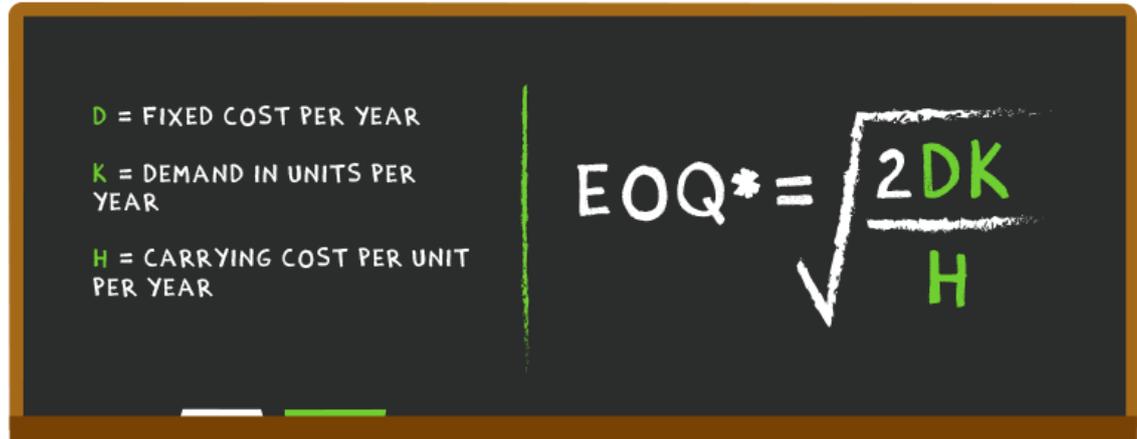
$EOQ = \sqrt{(2DK / H)}$ , or the square root of  $(2 \times D \times K / H)$

Where:

**D** = Setup or order costs (per order, generally includes shipping and handling)

**K** = Demand rate (quantity sold per year)

**H** = Holding or carrying costs (per year, per unit)



**D** = FIXED COST PER YEAR  
**K** = DEMAND IN UNITS PER YEAR  
**H** = CARRYING COST PER UNIT PER YEAR

$$EOQ^* = \sqrt{\frac{2DK}{H}}$$

- **Days inventory outstanding (DIO) formula**

Days inventory outstanding (DIO), also known as days sales of inventory (DSI), refers to the number of days it takes for inventory to turn into sales. The average inventory days outstanding varies from industry to industry, but generally a lower DIO is preferred.



$$DIO = \left( \frac{\text{COST OF AVERAGE INVENTORY}}{\text{COST OF GOODS SOLD}} \right) \times 365$$

Determining whether your DIO is high or low depends on the average for your industry, your business model, the types of products you sell, etc.

- **Reorder point formula**

The reorder point formula answers the age-old question: When is the right time to order more stock?

Calculating your reorder point takes three steps:

1. Determine your lead time demand in days;
2. Calculate your safety stock in days;

3. Sum your lead time demand and your safety stock.



$$\text{REORDER POINT} = \text{LEAD TIME DEMAND} + \text{SAFETY STOCK}$$

- **Safety stock formula**

As we touched upon earlier, safety stock acts as an emergency buffer you can break out when it looks like you're on the verge of selling out. You want to have enough safety stock to meet demand, but not so much that increased carrying costs end up straining your finances.

While this sounds like common sense, the trick is to decide on how much safety stock to carry:

1. Multiply your maximum daily usage by your maximum lead time in days;
2. Multiply your average daily usage by your average lead time in days;
3. Calculate the difference between the two to determine your safety stock.



$$\text{SAFETY STOCK} = \left( \begin{array}{c} \text{MAXIMUM DAILY USAGE} \\ \times \\ \text{MAXIMUM LEAD TIME IN DAYS} \end{array} \right) - \left( \begin{array}{c} \text{AVERAGE DAILY USAGE} \\ \times \\ \text{AVERAGE LEAD TIME IN DAYS} \end{array} \right)$$

### 3.2. Continuous Replenishment

Continuous replenishment it's a supply chain strategy in which frequent replenishment takes place from the supplier to the retailer or distributor in order to maintain better flow in supply chain and minimize bullwhip effect. It's a kind of Vendor Managed Inventory (VMI) system where the decision of quantity and time to replenish lies with supplier and not the retailer. But such moves need agreement between supplier and retailer. As well, Continuous replenishment is a misnomer; it's not continuous but frequent replenishment.

In order to implement continuous replenishment (**CR**), supplier needs to set an objective i.e., fill rate etc. Likewise, supplier needs to implement **IT** systems to establish real time flow of information in the supplier chain about sales e.g., distribution center withdrawals, retailer's point of

sales etc. These data are important to predict normal sales and deviations in demand, based on which inventory level is decided. This strategy also needs agreement on promotions.

The system itself suggest on how much to replenish time to time. The associated benefits of **CR** are reduced inventory, reduced stock out, minimization of bullwhip effect, improved customer service, reduced administration cost and enhanced perception value in trading partner. One of the concerns is about maintaining full truckload and transportation cost efficiency as replenishment quantity becomes smaller. But it can be minimized by using smaller trucks or loading more variety per truck.

### 3.2.1. Continuous Replenishment Program

In continuous replenishment the inventory levels at the customer level, or the retailer in retail sector, are maintained by the vendor continuously and the goods are replenished as per the agreed upon level. This calls for good synergies between all the parties involved – producer, distributor, vendor, retailer and customer. At least one party monitors the inventory level of the other party.

In some cases, the vendor keeps a track of the customer's inventory levels and based on the real time data or forecasted data, the goods are replenished. In other cases, the customer himself keeps in touch with the vendor and continuously gets the replenishment.

This is in contrast with the traditional inventory management in which the goods are procured by purchase orders and the distributor or the vendor processes these orders to supply the goods.

**CRP** brings about multifold advantages and makes the supply chain more effective.

- Cost saving because of the decreased number of employees required in the supply chain. Employees who are responsible to maintain the inventory level and place the purchase order will no longer be required.
- Delivery quality also improves because of lesser hindrances and middlemen in the supply chain.
- It enhances the relationship between the supplier and the customer and helps in the long-term.

### 3.3. Job Advertisements

A **job advertisement** is an **announcement** of an **open job position**. The **main goal** of a job advertisement is to **inform potential job candidates** about a new opening and **attract them** to apply.

It is written in an **engaging tone** and it contains information not only about the job position, but also about your **company and the benefits** you offer. A well-crafted job advertisement will **target and attract** your **perfect candidates** and fend off all the other candidates.

**Job advertisements** are also, a way for companies to advertise open positions at their company. Currently, the majority of job advertisements are posted and read online. Job advertisements are often the first important point of contact between your company and potential candidates. Their decision whether or not to apply to your company depends on the quality of the content provided.

#### 3.3.1. How to write great job advertisement?

Job advertisement is based on the **job description** for a certain job position. It is written for your **candidate persona**.

Here is the **structure** of a great job advertisement:

- **Job title**  
Keep it clear, accurate and to the point. Avoid unconventional and vague job titles.
- **Job location**  
This is one of the main criteria job seekers use in job search, so be sure to mention it!
- **Job responsibilities**  
Keep it simple and mention only a few key duties and responsibilities.
- **Job requirements**  
List must-have qualifications related to education, previous working experience, technical and soft skills.
- **Company and benefits**  
Briefly introduce your company and focus on the benefits you offer. Include information about the salary range, exciting projects and perks.
- **Applying instructions**  
Explain who, how and when should an interested candidate contact.

### 3.3.2. Where to publish job advertisements?

Increase the reach of your job advertisements by publishing them on:

- Career site
- Online job boards
- Social media
- Newsletter
- Paid ads
- Local media

### 3.3.3. Jobs advertisement synonyms

A job advertisement is **also known as**:

- Job ad
- Job advert
- Job announcement
- Employment ad
- Hiring ad
- Recruitment ad
- Job posting

## 4. Modes of Transport

There are a number of **different modes of transportation in the logistics industry**, each having its own merits and disadvantages. From road, railway, marine, and air transportation, the method that you select depends on a few factors. For example, industries that need to transport heavy products opt for railway transportation along with road and Maritime transportation. These methods have the ability to accommodate heavier products, making them the ideal choice over air transportation. In this post, we'll discuss five common types of transportation in the logistics industry: roadway, rail, marine, air, and intermodal transportation. Hopefully, the pros and cons of each method can aid in your decision when looking to **transport goods**.

The four primary modes of transportation in logistics are shipments by truck, ship, train and plane - also known as road, maritime, rail and air shipments. While each of these modes of transportation has unique benefits, knowing which method is right requires careful consideration.

### 4.1. Transport and Handling Equipment

Transporting products and parts from one place to another is a delicate process. This is the case whether you are moving something as tough as steel or as fragile as glass. Although productivity is high on the list of priorities for manufacturing companies, the safety of employees and the products they produce are of even greater concern. Fortunately, there are ways to keep your products and workers safe without compromising throughput. One of the most effective ways to accomplish this is by incorporating material handling equipment.

Transport equipment is used to move material from one location to another. The type of **transport equipment** varies depending on where the products or materials are being transported such as, within an assembly line, between facilities, on a loading dock, into storage, etc. Just a few types of transport equipment include:

- Canted Cradles
- Dollies
- Platform Cart
- Material Handling Cart
- Mobile Storage Cabinet
- Parts Handling Cart
- Service Cart
- Sub-Assembly Transport Cart
- Tool and Maintenance Cart
- Truck
- Automatic Guided Vehicles (AGV)

#### 4.1.1. Custom Material Handling Equipment

While stock transport equipment is available in standard shapes and sizes, keep in mind **you can also have equipment customized**. If your product is unique you may not be able to find a suitable "off the rack solution". At that point custom material handling equipment can prove cost-effective when you factor in the areas of safety, throughput time, and damages. **Material handling equipment adds durable ergonomic mobility** which helps reduce workplace injuries, streamline production lines and prevent damage during internal transit and sub-assembly shipping to other locations.

#### 4.1.2. Other Types of Material Handling

##### Positioning Equipment

Poorly positioned products and equipment can be dangerous for workers during transport, handling, storage and machining. It could also wreak havoc on your bottom line. To prevent worker injury and damage to products and materials, choose from positioning equipment such as work assembly stands, platforms, and stock pickers. If you require something tailored to your needs, customization is always a viable option.

##### Storage Equipment

Shelving, pallets, and storage carts are just a few types of storage equipment that can enhance processes and increase safety. Storage equipment helps reduce or eliminate clutter, organize other equipment and tools, and preserve floor and storage space. When work areas operate efficiently and safely, employees are safe.

##### Multi-Use Systems

Multi-use systems help speed up and simplify manufacturing processes. Staging stands, product build stands and isolators are just a few types of multi-use systems. These systems work by combining several products into one unit that can perform multiple tasks. Like storage equipment, multi-use systems can also preserve precious floor and storage space.

## 4.2. Container Types

Containers come in different shapes and sizes. Suitable for different purposes. Knowing your container types gives you a headstart – and the best chances to make the right business decisions for you.

International trade was revolutionized by the shipping container. In the 1950s, Malcom McLean initiated the history of container shipping by inventing the container. Improving profitability, efficiency, and optimizing the loading time of container shipping.

Different container types were standardized in 1970. ISO regulations dictated that the 20 feet container type and 40 feet container type now were industry standards. Since they were put to use, these containers have been widely used to ship goods on the international seas, but what are the different container types and dimensions?

### 4.2.1. Container types and Dimensions

#### Standard container types

A standard container is the most common type of container in the market. It is usually made of steel and sometimes aluminium. The aluminium containers have a slightly higher payload. They are airtight and water-resistant, preventing damage from the outside. One end of the container has doors through which the cargo is stowed. Despite the standardized sizes of 20 and 40-foot containers, the capacity of the containers can vary from operator to operator.

Standard containers can carry most types of dry cargo such as boxes, pallets, sacks, barrels, etc. It can be customized on the inside to carry a specific type of goods. For instance, hangers can be fit inside to carry clothes that could be directly transported to the store. Since standard containers are basic, they are not expensive.

- **High cubes** - High cubes, in short HC, refers to containers that are similar in structure to normal containers. The length and width remain the same, and the height increases. This enables them to meet more cargo demands.

#### Special container types

A special container has been manufactured or converted for different purposes to suit specific needs that can't be covered by a container with standard sizes and dimensions. Many things

can be changed such as: A different position of the door(s), changes in the height and width of the container itself, or technological equipment.

Below is a list of special container types and dimensions that you should be aware of:

- **Reefer container** - Reefer containers are nothing but container-sized refrigerators to move goods that need to be maintained at a certain temperature. The flooring of the container has T-shaped decking which sends chilled air into the container. This makes sure there is a consistent airflow among the goods. They can maintain any temperature between -30°C and +30°C. Reefer containers mostly come in 20-foot equivalent units. They carry temperature-sensitive items such as fruits, vegetables, ice cream, drugs, or meat. Each item has a different temperature requirement and it needs to be maintained to protect its freshness. The reefer container can be sectioned to cool and freeze at the same time. It is powered by a generator that provides electricity. When they're on the road being transported by trucks, the containers are powered by fuel. The reefer container is expensive considering the power and maintenance requirements.
- **Double door container** - Double Door Containers are built to have double doors that swing open outside on both ends. Both sets of doors are built with the same specifications. It is the most convenient option for loading and unloading a container, as goods can be loaded or quickly unloaded from either end as required. For instance, a car loaded can just drive through and doesn't have to be reversed. They are also called tunnel containers as they are used to create a safe passage in construction sites. The container can be customized according to the storage purposes of the customer. It can be partitioned to make different slots.
- **Open-top container** - Open-top containers, as the name suggests, have an open top. The roof of the container is covered with tarpaulin sheets instead of a solid roof. That way it can be covered or left open according to convenience. The container is made of steel with wooden flooring and the door heads can be swung open for easy loading and unloading. They're usually in the sizes of 20-foot and 40-foot containers. Open-top containers are used when cargo is too large to be in a regular shipping container. For instance, machinery or heavy materials that cannot be stowed sideways but arranged from the top through heavy-lifting cranes. These containers have larger capacities than the normal ones as the roof is open. It has lashing rings that keep the cargo stable and has the capacity to load 1000 kgs. The open-top containers might be generally high in price as there are not many units in circulation in the market. The price may also differ based on whether the container is in "gauge" or not. As in if the height of the cargo is

under the roof level or is protruding above the roof level. If the cargo is protruding, it is expensive and other containers cannot be stacked on top of it, and it is very wasteful. Some of the common items loaded in an open-top are pipes, cables, construction materials, machinery, and bulky raw materials.

- **Pallet wide** - These containers were designed specifically to carry wooden Euro pallets that are commonly used within Europe. They are available as 20-foot, 40-foot, and high cube containers. The pallets are usually in the size of 1200x800x144. A standard 20-foot container can carry 11 of them, while a pallet wide 20-foot container can carry 15 pallets. This is possible because the containers are approximately 5m wider on the inside than the standard ones. The pallet wide containers keep the cargo tight, so there is almost no chance of cargo slipping. As seen, this kind of container is made to measure exactly two euro-pallets in width. In comparison, the standard container is only able to carry one.
- **Flat rack containers** - Flat rack containers are used for heavy loads and cargo that need loading from the top or sides such as pipes, machinery, or busses. The containers only have sides on the short end of the container. The numerous lashing rings allow the load to be secured safely and by the legal regulations. For example, crates exceeding the size of a closed container can be loaded. It's even possible to attach stanchions. Thus, creating a lateral boundary without having to forego the other advantages of a flat rack container. The new generation of flat rack containers is capable of accommodating loads of up to 40,000 – 50,000 kilograms with uniform distribution of the load. Although this makes it possible to load the above-mentioned goods, they usually take up a single place on a container ship. Due to the dimensions of the cargo or its weight, stacking is not possible. There are different sizes of flat rack containers and two different types. A collapsible flat rack has sides that can be collapsed so that empty containers can be shipped more efficiently. Fixed-end flat racks can be shipped and have greater top load as they are often stronger in construction.
- **Side door container** - A side door container, also known as an open side container, has extra doors that open on the long side of the container on top of the doors in the end. The floor is fitted with surringrings to hold the cargo in place. The side doors make it extremely convenient to load cargo that is bulky and cannot fit through the end doors. More workers can work simultaneously while loading or retrieving the cargo and it gives full access to retrieve what is needed.
- **Hard top container** - Hard top containers are very similar to open containers with the difference being a detachable steel roof instead of a tarpaulin sheet. The roof of a hard

top container has points through which a forklift can lift the roof. As seen with the previous containers, this design allows for easy loading.

### 4.3. Types of Goods

Goods are the things that people use to satisfy their needs or wants. Goods can be of different types and can be produced through different methods such as production process in the factory, agricultural procedures, mining activities, manufacturing, etc. Goods can be anything from merchandise, supplies, raw materials to already completed products. All items that are movable and are sold to a particular buyer.

**Goods are usually categorised into any of the following:**

- **Durable goods:** refer to the ones that last a relatively long time and that are not dissipated or depleted when used generally, such as machinery and tools.
- **Consumer goods:** are the ones that are purchased primarily for the buyer's own usage (personal, family or household use).
- **Hard goods:** are consumer durable goods, such as appliances.
- **Soft goods:** are consumer goods that are not durable, can break and damage, such as clothing.

## 5. Planning and Arranging Transport

Transportation involves the physical movement or flow of goods. The transportation system is the physical link that connects customers, raw material suppliers, plants, warehouses and channel members. These are the fixed points in a logistics supply chain.

The basic modes of transportation are water, rail, motor carrier, air and pipeline. Water being the slowest mode with rail, motor carrier, and air following in order of speed of delivery. Generally, the order is reversed when looking at costs.

The process of selecting an appropriate carrier consists of several steps. First the firm selects a mode of transportation. The shipper must compare the service desired with the rate or cost of service. Pickup and delivery, terminal handling and movement between origin and destination account for the time involved in transporting goods.

### 5.1. Transport Options

#### 5.1.1. How to Choose the Best Type of Logistics Transportation for Your Company

In a world where fast shipping is not just a luxury, but an expectation, choosing the right type of logistics transportation for your company is crucial for the success of your business, the safety of your product and the happiness of your customers. Before you choose a logistics transportation method, consider the following factors and use the information to guide your decision making:

- **The Product**

First, analyse the shipment you are transporting. Is your product hazardous, perishable or challenging to handle? What are the dimensions of the shipping container? This information is critical for choosing a shipping method that can accommodate your products within budget.

- **Location**

Next, consider two locations - where the shipment is leaving and its final destination:

- **Shipping origin:** Where are you shipping from? Where you or your products are located is important, as it's the starting point for your mileage tracking. Do you have access to maritime ports, railroads or airports?
- **Borders:** Are you shipping across country borders and require special clearance? What natural borders will your shipment cross? While one method of transportation might be the most suitable option for your product, it may be more expensive and time-consuming than other means if you are not located within easy access to these options.

- **Shipping destination:** Where are you shipping to? The shipping destination is one of the most significant factors to consider. Calculate the total shipping distance, factoring in all stops and checkpoints.
- **The consumer:** Are you shipping to an individual or a business? This might indicate which speed or method is preferable.

- **Special Considerations**

Finally, take into account the cost and difficulty of any special considerations your shipment requires:

- **Time:** The time of year you're moving your product — during the holiday season, for instance — might impact overall shipment times.
- **Urgency:** How urgent is your shipment? Can you afford a delay — both financially and in the eyes of your consumers?
- **Budget:** What is your transportation budget? Convenience is great, but staying within your budget is crucial for longterm operations.
- **Existing relationships:** Examine the resources to which you already have access. What shipping and logistics companies do you have a relationship with already? What services do they offer?

No matter how you ship, there are advantages and downsides to each method. The secret to finding the best transportation option for your business is understanding these differences. Here is a breakdown of each transportation method and its pros and cons:

- **Truck Freight — Road Transportation**

Road transportation has come a long way since the days of horse and wagon shipments. Truck freight alone accounts for more than 54% of all northern border freight between Canada and the United States. Truck transportation is ideal for industries that require quick, small shipments directly to a business, warehouse or consumer's door and is equipped to handle possible delays.

The top three commodities in trans-border truck shipping are computers and computer parts, electrical machinery and vehicles and motor parts. Other industries that rely on truck freight include grocery and retail, eCommerce, construction and agriculture.

**- The top benefits of truck freight include:**

- **Implements fewer restrictions:** Compared to other modes of transportation — especially air transport — there are far fewer restrictions for truck freight, including

heavy or hazardous materials. Trucks are also easier to track than other modes of transportation, due to built-in navigational systems and real-time tracking abilities, so you always know exactly where your shipment is located.

- **Costs less than air and ship transportation:** Truck freight is very economical compared to air and ship transportation because associated expenses, such as fuel and truck maintenance, are far less costly.
- **Allows for more accessibility:** Road transportation is highly accessible. Most companies have easy access to a major highway system, while not every company has access to railroads, airports or ships for other forms of transportation.
- **Offers more options:** With truck freight, you have limitless options available to you. There are many different specialized trucking companies that can accommodate perishable, hazardous or oversized goods. Depending on the shipping company, you can also choose from things like parcel, full truck and less than truckload shipping. When you only need to ship a small number of packages, parcel shipments are an excellent option. Similar to parcel shipping is less than truckload (LTL) shipping. LTL freight services are ideal when your shipment is less than a truckload but too large or oddly shaped for parcel shipments. When compared to full truckload shipments, parcel and LTL provide an enticing level of flexibility that other transportation methods cannot.
- **Allows for door-to-door shipment:** Perhaps the most significant benefit associated with truck freight is the ability to ship a product directly to the consumer's front door. Although last-mile delivery is not always available due to the type and size of the product or final destination, the possibility of door-to-door shipment is why many companies opt for truck freight over other methods.

Despite these numerous benefits, there are a few important factors to consider before selecting truck freight, such as:

- **Time:** Truck freight can take longer and is more susceptible to shipment delays than other methods. The average truck travels roughly 50 to 60 miles per hour on major roadways. Other factors, such as road closures, bad weather or heavy traffic, can also have unpredictable impacts on delivery times.
- **Control** Due to how truck freight works, you do not have as much control over how your products are handled. Road travel can be rough on some shipments, and some companies may mishandle your product — that's why it's crucial to work with a trusted logistics company backed by awards and client testimonials.

- **Ship — Marine Transportation**

Ocean transport accounts for more than 90% of the world's trade economy. The United States alone relies on water transportation for almost 70% of all international merchandise trade. Whenever your business requires transport for heavy, cumbersome loads — or country to country shipping - ship transportation is usually the way to go.

Compared to air transportation, ships are capable of carrying immensely heavier loads for a fraction of the cost. It is the preferred transportation for large items shipped in bulk, such as metals, agriculture products, building supplies and others that cannot be reasonably accommodated by plane.

- **The benefits of maritime transportation include:**

- **Accommodates more space and weight:** Cargo ships range in length, and can carry thousands of tons of weight. For this reason, ships are often the best — and only — option for oversized products or bulk quantities that must move at the same time.
- **Costs less than air transportation:** Marine transportation is often a more economical choice than air transport due to the lower cost of fuel. Cargo ships operate on a set schedule, so there is also less opportunity for costly shipping delays.
- **Enhances the safety of the shipment:** Because ships operate on a set route and planned schedule, your shipment will go through minimal handling. Most of the time, it will be securely stored in a slow-moving vessel, which is preferable for easily damaged goods.

Sea transportation may not always be the most economical or accessible choice, depending on the location of your warehouse. However, the most significant factor to consider about maritime transit is how long it takes to move a shipment:

- **Speed:** Although ships are capable of carrying much bigger loads than other transportation methods, maritime shipping takes much longer. It is not usually the preferred shipping method for businesses that rely on speedy delivery.

- **Train — Rail Transportation**

Since the invention of the railway, trains have played an important part in trade and logistics around the world. As of January 2020, rail freight accounted for roughly 15% of northern border freight between the United States and Canada, with the top three commodities being motor vehicles and parts, mineral fuels and plastics. Rail transport is ideal for companies who require fast, scheduled ground freight.

**- Some benefits of rail transport are:**

- **Offers more carrying capacity:** Trains can transport heavy, bulk cargo — such as coal — over long distances. They can handle more weight than truck transportation.
- **Reduces the chances of delays:** Trains operate on a fixed schedule, making them a predictable and reliable form of transportation. Because railroads operate independently, train shipments are often less prone to delays that plague truck freight, like traffic jams or inclement weather.
- **Minimizes its environmental impact:** Although the environmental impact of a shipment depends on a combination of several different factors, trains tend to be less impactful than trucks, planes and ships because they require less fuel to operate.

**- The two main factors to consider with rail transport are:**

- **Transit time:** Rail transport is slower than truck and air freight, and they often require multiple transfers throughout the shipment process.
- **Accessibility:** Not every area has access to railroad tracks, so rail transport almost always requires other forms of transportation to move products. Rail transportation is often combined with truck freight for efficient delivery.

• **Plane - Air Transportation**

Air transport is the newest shipping method, but it is often the best choice if you want fast, uncompromising delivery. Air transport is accessible across most of the world and is ideal for shipments that need to be moved quickly across long distances, including overseas. Air transportation also has a vast scope compared to rail and ship freight, as it is an ever-expanding industry with several thousand airports and landing strips in operation across the globe.

**- The two most significant benefits of air transport are:**

- **Allows for speedy deliveries:** Despite the possibility of occasional flight delays, air transport is significantly faster than ship, truck or plane delivery under most circumstances. Additionally, airplanes operate on a fixed schedule. This reliability is an asset when arranging shipment, particularly for perishable goods that require prompt — often overnight — delivery.
- **Offers enhanced security:** Planes offer this speed with little to no compromise to the quality of the product, providing optimal protection and safe handling due to rigorous flight checkpoints and little interference during flight.

**- However, a few disadvantages to consider about air transport are:**

- **Cost:** Air transport is more expensive than truck transport due to the higher cost of fuel and additional expenses like tickets, maintenance, checkpoints, special handling fees for certain materials, shipping containers and more. When ground logistics are an option, and guaranteed quick delivery is not required, trucks are often the more economical decision. For companies who can afford the cost and rely on fast shipments, air transport is ideal.
- **Limitations:** Due to the nature of air transport, there are certain limitations in place that some companies may find difficult to navigate, including size, weight and product restrictions. Airplanes have a set weight capacity that they cannot exceed, and many materials are too hazardous to transport via flight.

### 5.1.2. What Is Intermodal Transportation?

Intermodal transportation is when a shipment requires two or more types of transportation to reach its final destination. This is typically used with rail and ship transport, which often require trucks to carry shipments from the railway or port. Intermodal transportation is ideal for shipments that are not of immediate value that have to travel a long distance.

In most cases, products remain inside the same shipping container throughout the entire process. In other cases, however, your products might be transferred from one shipping container to another. Always discuss this with your transportation and logistics provider to make sure you are packaging your products accordingly. You should also keep in mind the different restrictions and requirements across all modes of transportation. For example, just because your shipment fits within rail transportation guidelines, does not mean it will qualify for air travel.

## 5.2. Measurements

### 5.2.1. Length, Width, Height and Weight

**Length** – Is the measurement or extent of something from end to end; the greater of two or the greatest of three dimensions of an object. Length is the term used for identifying the size of an object or distance from one point to another. Length is a measure of how long an object is or the distance between two points. It is used for identifying the size of an object or distance from one point to another. The length of an object is its extended dimension, that is, its longest side.

**Width** – Is the measurement or extent of something from side to side; the lesser of two or the least of three dimensions of a body.

**Height** – Is the measurement of someone or something from head to foot or from base to top.

**Weight** – Is a body's relative mass or the quantity of matter contained by it, giving rise to a downward force; the heaviness of a person or thing.

**Volume** – Is the amount of space, measured in cubic units, that an object or substance occupies. A mass or quantity, especially a large quantity, of something.

Metric measures	Imperial measures	Temperatures
<p><b>Length</b> 10 millimeters = 1 centimeter 100 centimeters = 1 meter 1,000 meters = 1 kilometer</p> <p><b>Area</b> 10,000 square centimeters = 1 square meter 1,000,000 square meters = 1 square kilometer</p> <p><b>Weight</b> 1,000 grams = 1 kilogram 1,000 kilograms = 1 metric ton</p> <p><b>Volume</b> 10 milliliters = 1 centiliter 10 centiliters = 1 deciliter 10 deciliters = 1 liter</p>	<p><b>Length</b> 12 inches = 1 foot 3 feet = 1 yard 1,760 yards = 1 mile</p> <p><b>Area</b> 144 square inches = 1 square foot 9 square feet = 1 square yard 4,840 square yards = 1 acre 640 acres = 1 square mile</p> <p><b>Weight</b> 16 ounces = 1 pound 2,000 pounds = 1 short ton</p> <p><b>Volume</b> 8 fluid ounces = 1 cup 2 cups = 1 pint 2 pints = 1 quart 4 quarts = 1 gallon</p>	<p><b>Degrees Centigrade / Celsius</b> Boiling point of water 100°C Freezing point of water 0°C Normal body temperature 37°C</p> <p><b>Degrees Fahrenheit</b> Boiling point of water 212°F Freezing point of water 32°F Normal body temperature 98.6°F</p> <p>To convert Centigrade to Fahrenheit: multiply by 9, divide by 5, and add 32. (e.g.: 20°C x 9 = 180; 180 ÷ 5 = 36; 36 + 32 = 68°F)</p> <p>To convert Fahrenheit to Centigrade: subtract 32, multiply by 5, and divide by 9.</p>

### 5.2.2. Importance of Gross & Tare Weight in Logistics

#### Gross Weight

The gross weight of shipment is to total weight of the tractor and trailer (or when it comes to intermodal the combination of the chassis and container), along with all its contents.

In other words, whatever the total weight is of tractor and trailer is when it is scaled is the total gross weight. The gross weight of a shipment is sometimes called laden weight.

#### Tare Weight

Tare weight is defined as the total weight of tractor and trailer when the vehicle is empty, meaning there is not any product in the trailer. Tare weight can also be called unladen weight. Often times the tare weight is printed on intermodal container to help in the computation of the gross weight when loading the equipment.

The importance of gross and tare weight is to ensure a shipment is legal on roads and bridges. Not only is the total weight important when shipping a truckload or intermodal shipment, but so too is the distribution of weight across the tractor and trailer.

### 5.2.3. How can you use Transportation Metrics to Improve Your Logistics Operation?

Follow these basic steps:

- **Avoid “Analysis Paralysis”:** The first step is to identify the transportation metrics that you want to use. Do not use every metric available. Rather, focus on the vital measurements that mean the most to your business. These can be considered your KPI’s (key performance indicators). You should have 3-5 KPI’s per functional area. If you decide to include numerous measurements, you may encounter “analysis paralysis”. Remember, around your logistics and supply chain operation, and in your business in general, there are many metrics to measure.
- **Understand the Meaning:** Next, you need to understand the meaning of these transportation metrics. It is not enough for management to simply view these measurements; they must also understand the meaning behind them. That means leadership must know and be on the same page with transportation terminology as well as the meaning of these metrics. Don’t take anything for granted.
- **Learn the Mechanics:** The next step is to learn the mechanics behind the measurements. What drives them, both positive and negative? Try to understand the various factors that influence your results.
- **Identify Weak Processes:** Using the insights gleaned from these core transportation metrics, identify any weak areas or areas of improvement in your current transportation processes.
- **Set Aggressive but Obtainable Goals:** Set goals based on these improvement areas. The goals should be aggressive, but yet obtainable. Goals can be based on benchmarking against “like” companies or goals can be set to reflect a specific percentage improvement over past performance. As an example, improving your results by X% every year.

- **Put corrective action in place to improve your processes:** Make sure that these corrective actions do not negatively affect other areas. Also, check that all affected areas have a clear understanding of the changes.
- **Monitor your results:** Did your corrective actions yield your desired results? If so, what is your next area for improvement? If you did not get the desired results, what went wrong? Try to identify the root cause of your undesired results, then brainstorm new corrective actions.

### Transportation Metrics that Matter the Most

- **Freight cost per unit shipped:** Calculated by dividing total freight costs by number of units shipped per period. Useful in businesses where units of measure are standard (e.g., pounds). Can also be calculated by mode (barge, rail, ocean, truckload, less-than-truckload, small package, air freight, intermodal, etc.).
- **Outbound freight costs as percentage of net sales:** Calculated by dividing outbound freight costs by net sales. Most accounting systems can separate “freight in” and “freight out.” Percentage can vary with sales mix, but is an excellent indicator of the transportation financial performance.
- **Inbound freight costs as percentage of purchases.** Calculated by dividing inbound freight costs by purchase dollars. It is important to understand the underlying detail. The measurement can vary widely, depending on whether raw materials are purchased on a delivered, prepaid, or collect basis.
- **Transit time:** Measured by the number of days (or hours) from the time a shipment leaves your facility to the time it arrives at the customer’s location. Often measured against a standard transit time quoted by the carrier for each traffic lane. Unless you are integrated into your customers’ systems, you will have to rely on freight carriers to report their own performance. This is often an important component of lead-time. Transit times can vary substantially, based on freight mode and carrier systems.
- **Claims as % of freight costs:** Calculated by dividing total loss and damage claims by total freight costs. Generally measured in total and for each carrier. A high number generally indicates packaging problems, or process problems at the carrier.
- **Freight bill accuracy:** Calculated by dividing the number of error-free freight bills by the total number of freight bills in the period. Errors can include incorrect pricing, incorrect weights, incomplete information, etc. Generally measured in total and for each carrier.

- **Accessorials as percent of total freight:** Calculated by dividing accessorial and surcharges by total freight expenditures for the period. Many freight carriers will charge extra fees for trailer detention/demurrage, re-delivery, fuel increases, and other expenses or extra services. Often, these are extra costs incurred due to inefficient processes.
- **Percent of truckload capacity utilized:** Generally used for shipments over 10,000 lbs. Calculated by dividing the total pounds shipped by the theoretical maximum. For example, assume your trucks can hold 40,000 lbs. of product. During the prior month, there were 675 shipments totalling 22.95MM lbs. The percentage utilization was 85%. The 15% unused capacity is an opportunity for more efficiency.
- **Mode selection vs. optimal:** This is calculated by dividing the number of shipments sent via the optimal mode by the total number of shipments for the period. To measure this, each traffic lane must have a designated optimal mode, based on freight costs and customer service requirements.
- **Truck turnaround time:** This is calculated by measuring the average time elapsed between a truck's arrival at your facility and its departure. This is an indicator of the efficiency of your lot and dock door space, receiving processes, and shipping processes. This also directly affects freight carrier profits on your business.
- **Shipment visibility/traceability percent:** Calculated by dividing the total number of shipments via carriers with order tracking systems, by the total number of shipments sent during a period. This is an indicator of the relative sophistication of your carrier base, and one measure of the non-price value available from your carrier base.
- **Number of carriers per shipment:** Calculated by counting the total number of freight carriers used in a given period, by shipment. This is an indication of your volume leverage and control over the transportation function.
- **On-time pickups:** Calculated by dividing the number of pick-ups made on-time (by the freight carrier) by the total number of shipments in a period. This is an indication of freight carrier performance, and carriers' effect on your shipping operations and customer service.

### Keep the Following in Mind When It Comes to Tracking Transportation Metrics

- Tracking your transportation metrics allows you to view your performance over time and guides you on how to optimize your logistics and supply chain operations. Tracking these core metrics allows management to identify problem areas and fix them with data AND experience. It also allows for comparison to other companies through like industry benchmarking.

- Certain metrics, have a widely accepted definition. Other metrics may need to be customized for your particular industry or logistics business model.
- Measurements alone are not the solution to your weak areas! The solution lies in the corrective actions that you take to improve the measure. The solution comes from process or system improvements. The measurements should be used to track the results of your improvement efforts.
- Tracking transportation metrics should have an owner. This needs to be a person or department that is responsible for achieving an agreed upon target on the metric.
- Management needs to adopt, encourage, and support the process changes to achieve the desired targets.

If you are not tracking transportation metrics today, we strongly encourage you to implement tracking these core metrics listed above today. It's common knowledge that analysing data combined with expertise can truly allow you to affect change in your organization. This is not change for change sake, but rather change to improve your business and impact your bottom line. If you are looking to track your transportation metrics better, feel free to [reach out to us for a demo of our transportation management system](#) or for a [logistics consultation today](#).

### 5.3. Quotations

#### 5.3.1. What is a Shipping Quote?

A Shipping Quote is a document that breaks down the individual legs of a shipment and the surcharges each will incur, as per your [freight quote](#).

##### Freight Quotation Format

- Information about where your cargo is the being shipped to and from.
- The transport mode and equipment being used (eg, by ocean on pallets).
- Shipment details, including dimensions, weight and a description of the goods.

Most Shipping Quotes have an expiration date which indicates how long the price is valid.

### 5.3.2. So, What Is A Freight Quote?

What exactly is the meaning of a freight shipping quote in your shipping process? Your Freight Quote kicks off the shipment process. It serves as evidence of your freight forwarder's commitment to providing the promised service.

A freight quote offers an estimate of what the total cost of shipping will be based on the information you have provided, including weight, dimensions, type of product being imported, and other factors. If the information provided is accurate, the final price will likely match the initial freight quote from carriers or logistics providers.

If the information provided isn't accurate, the final price may be higher than the initial quote because of reweighing fees or other additional costs.

## 6. Shipping Goods

Shipping is the physical moving of good from one point to another, such as the moving of merchandise from the warehouse to the customer. **The shipping process follows the manufacture and the packing of goods and will be controlled by a shipping or logistics company.**

Shipping can take several forms depending on the distance covered and the speed of delivery necessary. **The most cost-effective type of shipping is ground shipping**, although it is also the slowest form. Basic discounted ground shipping could take up to 10 days or longer at peak holiday shipping times. For quick deliveries air freight would be used, however this is also more expensive. In the case of international shipments freight can be sent via ocean shipping, and while this is very cost effective, it is also extremely slow, taking up to 6 weeks or longer in some cases. While air freight gets around this, international air freight can also be very expensive.

Shipping costs also tend to decline with larger volumes. While a single package may cost \$5 to ship, you could see a massive discount if you were shipping 100 packages. Companies like Amazon can provide free shipping to select customers because of their massive shipping volumes and the discounts they enjoy. Ecommerce retailers always need to consider the costs of shipping and how these will be incorporated into pricing, or passed along to customers.

There are many different types of ships, and the differences are mostly based upon the type of cargo the ship transports. Modern seagoing commercial vessels come in all shapes and sizes and are designed to carry a wide variety of cargoes.

### Cargo types

To begin with, we will define the main cargo types. For the purposes of this article, cargoes are divided into:

- dry
- liquid
- specialised

Each of these can be divided further into subcategories.

**Dry cargoes** include bulk, general and breakbulk, containers, reefer, and Ro-Ro.

**Liquid cargoes** are predominantly petroleum based, but may also include chemicals and liquefied gasses.

**Specialised Cargoes** have specific loading, unloading or stowage arrangements required. It refers to cargoes that are either difficult to categorise as dry or liquid, or to cargoes that are relatively difficult to handle.

## 6.1. Markings

### 6.1.1. Shipping Marks and How To Label Cartons For International Transit

Shipping marks are used to clearly tell the people handling your goods what to expect when they pick them up and how to handle them. The marks may also be used in the UK to identify different products within a single shipment.

### 6.1.2. Why Your Cartons Need To Be Labelled For Transit

When shipping, your cartons need to be clearly labelled because shipping labels are directions for the people handling your goods. Before the staff who unload a truck/load the container/palletise boxes for delivery (etc., etc.) touch a box they should know about the goods inside. How heavy it's going to be (should it be on the top or bottom of a pile), is it fragile or do the contents need to stay a certain way up.

Remember, your products are in boxes – so people won't immediately know what they are and what precautions need to be taken when transporting them. Handlers need to be able to identify the type of product they're handling and what sort of provisions need to be made for safety and efficiency.

Not only for handling purposes, carton marks and labels are used for identification and to keep consignments together. If your goods don't fill a container then they need to be easily identifiable. That's why carton marks in LCL shipping are so important.

### 6.1.3. Shipping Marks In LCL Shipments

When you're shipping via less than container load (LCL), your goods will be packaged into a shared container. Although this is an efficient way of shipping that can save you a lot of money, the fact that there are so many people's products in one shared container can lead to confusion if your supplier hasn't clearly packaged and labelled your goods.

When importing goods from China most goods aren't palletised in transit meaning your goods will be packaged in loose cartons. Imagine if 10 companies in a shared container had 50 loose cartons – now, on top of that, remember that all cartons typically look fairly similar. You can see where this gets confusing, can't you?

There's no need to worry, though; so long as your goods are labelled correctly with the right shipping marks, it's easy to separate them when the container is unpacked. Today's post is all about what those shipping marks are and how to make sure that your supplier has used them.

#### 6.1.4. Shipping Marks Are For Your Benefit

Shipping marks, however, are also for *your* benefit. They clearly mark and distinguish all of your stock, which in turns makes it easier for you to find and unpack.

For example: if you've got an order of 300 cartons that has 5 colour variations, your supplier can make sure that these variations are reflected in the labelling. This then cuts out a lot of wasted time and effort crawling through cartons to try find a specific product. So, let's say you're looking for a medium green T-Shirt; you can look at the labels to find which box contains the Green T-Shirts and in what size.

In the same sense, if you're using a fulfilment warehouse to fulfil your orders, having your cartons labelled clearly helps the warehouse to be able to efficiently unpack and dispatch your goods.

#### 6.1.5. How To Label Your Cartons For Transit

People use different shipping marks in their cartons, but the markings that we recommend are:

Carton number → [e.g. 1 of x, 2 of x, 3 of x, etc.]

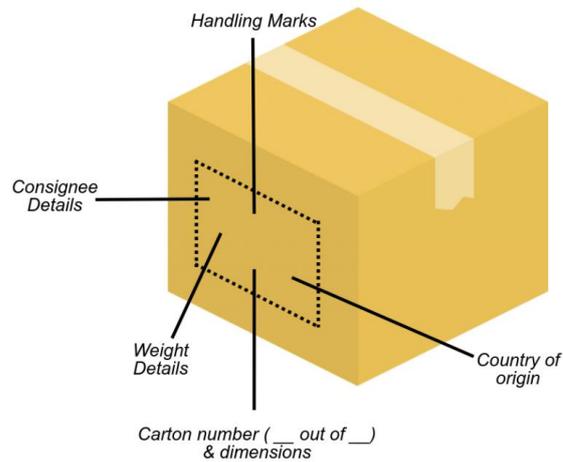
Carton size → [dimensions in cm]

Net Weight → [in kg]

Gross Weight → [in kg]

In addition to that, it's probably a good idea to ask for your company name to be put on the cartons. You can also request for other things like quantity of items inside (and type of item if you're shipping lots of different colours or sizes) or anything else that may help you on arrival to be put on the cartons.

## Shipping Marks and How To Label Cartons



### 6.1.6. Packaging for Transit Symbols (Handling Marks)

For safety and transit related marking, you'll want to use symbols instead of writing; these are universally recognised. When shipping goods internationally, it's very likely that they'll encounter people who can't speak the language your markings are written in, so using symbols is important to convey the conditions goods need to be kept in when shipped.

Here are the symbols that are usually used in shipping and what they mean:



## Dangerous Goods Markings



If you're shipping goods that fall under any of the 9 classes of dangerous goods, you will need to make sure that your cartons are correctly marked with their hazard symbols. This is because dangerous goods (products that are hazardous for transit – as transport conditions can cause reactions which cause them to be unstable. Not necessarily products that are dangerous themselves) need to be handled with care.

Products that are considered hazardous goods require controlled conditions that are specific to their class's needs – so it is imperative that their cartons are marked so people handling them can make the necessary arrangements.

### 6.2. Loading

**Load** is a burden; a weight to be carried.

#### 6.2.1. Loading List

The loading list or the consignment note is part of the freight documents of each transport. The loading list serves as a list of all goods of a freight on a means of transport. These accompanying documents are carried along during the entire transport until delivery to the recipient of the goods.

In the case of cross-border transport, the loading list is used for customs clearance. In addition to the exact number of goods, the volume and weight of the loaded goods of the transport is also listed.

To ensure that the cargo can always be declared properly during official inspections, the loading list must be carried along as a document at all times. The loading list can also be used to check that the load is adequately secured and that the means of transport is suitable for the transport and can be repaired if necessary. This is particularly important in the event of an accident or damage to the load.

When loading the means of transport, the carrier, for example the driver of the truck, uses the loading list to check whether the goods have also been loaded according to the documentation on the loading list. In the same way, when the consignment arrives at the recipient, the correct delivery of goods can be checked and receipt confirmed according to the loading list.

### **6.3. Advice of Shipment**

A shipment advice is a commercial document, which is issued by the exporter, who is the beneficiary of the letter of credit, in order to give shipment details to the importer, who is the applicant of the letter of credit.

#### **6.3.1. Who should issue shipment advice?**

The shipment advice should be issued by the exporters.

#### **6.3.2. When should the shipment advice be created and dispatched?**

The shipment advice should be created as soon as the shipping details are available. In a letter of credit transaction, the shipment advice should be created and dispatched within 3 or 5 days after the date of shipment.

#### **6.3.3. What is the function of a shipment advice or shipping advice in international trade transactions?**

The main function of the shipment advice is to allow importers to arrange transport insurance in a timely manner.

Especially, this document is vital importance in situations where importers have to arrange the transport insurance, such as FCA, FOB, CFR, FAS, CPT and EXW deliveries.

A shipment advice informs the details of the shipments to the importer. By having the details of the shipment in advance.

- The importer could arrange the transport insurance. For example, if shipment has been made via sea shipment, the importer could arrange a marine insurance policy with the information he received from the shipment advice.
- The importer could track the shipment by using the necessary information that have been collected from the shipping advice. For example, the importer could track the container, if he knows either the container number or bill of lading number. Both of this two information could be gathered from the shipment advice.
- The importer could initiate import custom operations, if the exporter has supplied copy of shipment documents along with the shipment advice. In any case, the importer has to present original shipment documents to the custom authorities upon arrival of the goods.

#### 6.3.4. What Sort of Information a Shipment Advice Should Contain?

A shipment advice should cover all the details of the shipment, so that the importer will be able to make the insurance coverage with the information provided by the advice of shipment only.

Below you can find the contents of the shipment advice along with explanations.

- **Introduction:** At the beginning of the shipment advice, a brief introduction paragraph should be placed. On the introduction paragraph, it would be advisable to mention the information as required by the letter of credit.

##### Shipment Advice Introduction Paragraph Example Format

Please be advised that the shipment under letter of credit number 011114010712 related to the Cover Note No. 0430/01/2015 dated 02.01.2015 has been effected to shipped on board with following details. This certificate of shipment has been sent directly to ABC Insurance Company Limited, Sadarghat, Dhaka. 15, Johnson Road (3rd floor), Sadarghat, Dhaka, Bangladesh by email at abcinsurancecompany@dhaka.net and to the openers at email no importers@yahoo.com within 3 (three) working days after shipment.

- **Description of Goods:** Description of goods should be mentioned on the shipment advice in accordance with the description of goods stated on the commercial invoice.

- **Invoice Value of Goods:** Total amount as shown on the commercial invoice should be mentioned on the shipment advice as well. This is an important part of the document, because this information is required for marine insurance coverage.
- **Letter of Credit Number:** If payment term is L/C, then letter of credit number should be stated on the shipping advice along with L/C Date of issue.
- **Name of the Carrier:** Irrespective of mode of transport, carrier's name should be mentioned on the certificate of shipment.
- **Name of Vessel and Voyage Number:** In case of sea shipment name of vessel and voyage number should be indicated. In case of air shipment flight number and in case of land shipment plate number should be added to the certificate of shipment.
- **Consignee and Notify Party:** Consignee and notify party should be mentioned on the shipment advice as indicated on the transport document. (Bill of Lading, Air Waybill, CMR Transport Document etc.)
- **Bill of Lading No:** Together with the container number, bill of lading no lets importer to track the consignment. (in case of air shipments air waybill no, in case of land shipments CMR no can be written)
- **Container Number:** Together with the bill of lading no, container number lets importer to track the consignment.
- **Shipped on Board Date:** Shipped on board date evidences shipment date, which is a vital information for the insurance companies. (sea shipments)
- **Seal Number:** Seal number of the container. (sea shipments)
- **Gross Weight:** Gross weight of the consignment.
- **Net Weight:** Net weight of the consignment.
- **Packages:** Total number of packages as seen on the transport document.
- **Shipper:** Shipper company name as seen on the transport document.

**Shipment Advice Example:**

**SHIPMENT ADVICE**

NO: 156400

DATE:27.01.2015

TO WHOM IT MAY CONCERN,

PLEASE BE ADVISED THAT THE SHIPMENT UNDER LETTER OF CREDIT NUMBER 14MUSH48002000 HAS BEEN EFFECTED TO SHIPPED ON BOARD WITH FOLLOWING DETAILS. THIS SHIPMENT ADVISE HAS BEEN SENT TO APPLICANT'S FAX NO: 00 966 1 200 2015 WITHIN 3 DAYS AFTER SHIPMENT.

*Signature + Stamp*

**DESCRIPTION OF GOODS :** BATHROOM MARBLES  
**AMOUNT OF BILL OF EXCHANGE / DRAFT:** USD86.660,40  
**L/C NUMBER:** 14MUSH48002000  
**L/C DATE OF ISSUE:** 23.12.2014  
**NAME OF THE VESSEL:** ASTRID SCHULTE  
**VOYAGE NUMBER:** 1501E  
**BILL OF LADING NO:** AMBJED0010  
**CONTAINER NUMBER:** UACU/373552/6, UACU/830322/7, UACU/829784/4  
**SHIPPED ON BOARD DATE:** 27.01.2015  
**CONSIGNEE:** TO THE ORDER OF AL RAJHI BANK  
**NOTIFY:** MARBLE IMPORTING COMPANY P.O.BOX NO.100400 RIYADH 11626, K.S.A FAX 00 966 1 200 2015  
**PORT OF LOADING:** AMBARLI PORT TURKEY  
**PORT OF DISCHARGE:** JEDDAH SEA PORT  
**GROSS WEIGHT:** 45.068,98  
**NET WEIGHT:** 32.928,10  
**PACKAGES:** 64 Pallets  
**SHIPPER:** BANYO MERMERLERI IHRACAT SAN. LTD ISTANBUL TURKEY TEL:0212 500 10 80 FAX:0212 500 10 70

#### 6.4. Shipping Instructions

Shipping instruction (SI) is a document, provided by a customer to the carrier, containing details of the cargo to be shipped and the requirements for its physical transportation.

The SI contains basic information that is required to draw up the bill of lading (B/L), such as:

- Booking number or B/L number;

- B/L parties including shipper, consignee, and notify party;
- Vessel or voyage or both;
- Place of receipt;
- Port of loading;
- Port of discharge;
- Final destination;
- Container number;
- Seal number;
- Shipping mark;
- Cargo description;
- Quantity;
- Weight and measurement;
- B/L type;
- Service agreement;
- Payment terms (prepaid or collect);
- House bill of lading (HBL) number and information.

The shipping instruction is always indexed to a booking or a bill of lading. Once indexed, the shipping instruction is available in SAP Transportation Management (SAP TM) for processing. Once a shipping instruction has been processed, a bill of lading is created from a booking. The shipping instruction is always indexed to a booking or a bill of lading. Once indexed, the shipping instruction is available in SAP Transportation Management (SAP TM) for processing. Once a shipping instruction has been processed, a bill of lading is created from a booking.

## 7. Warehousing and Storage

For a logistics business, running a warehousing and storage system is important. Though it could be considered an unnecessary expense, it can save you money and enhance the performance of your brand. Your business is concerned not only with a customer's order but every step that ensures the delivery of the order. Warehousing itself is part of the supply chain and while it is a place to store goods before preparing items for shipping, they provide better control over your inventory and are a guaranteed means to ascertaining that customers' orders are delivered on time, helping the business.

### 7.1. Handling Equipment

The term **material handling equipment** encompasses a diverse range of vehicles, tools and storage equipment. Typically, a warehouse is used to store items, and then move them to where they are needed. The easier it is to move items, the more efficient your warehouse can be. To increase efficiency, you need to have the right tools for the job – it will make your employee's lives easier, and cut down on the backbreaking strain they'd otherwise be exposed to with improper equipment.

Leaving aside storage equipment such as racks, stacking frames, and engineered systems such as complex conveyors and automatic guided vehicles for a moment, we will concentrate on two important types of material handling equipment: industrial trucks and bulk material handling equipment. We'll take a look at what each item does, so that you can then decide whether you'd consider adding it to your warehouse efficiency arsenal.

#### 7.1.1. Industrial Trucks

An industrial truck is a transportation device used to move items in material handling companies. These can range from small, hand-operated trucks to vehicular lifts. The most commonly found industrial trucks in warehouses are as follows:

- **Hand trucks** - This is a simple, two-wheel hand-operated truck or trolley, usually with a metallic frame and a toe-plate. Hand trucks are designed to ease the transportation of small items. Some come in a folding variety that packs flat when not in use.
- **Pallet jacks** - A pallet jack, truck or pump is used to transport materials that have been stacked on pallets. These jacks have twin forks, which slide under the pallet. The handle is then used to raise the forks with a pumping force, creating a hydraulic action that lifts the pallet, and enables transportation.

- **Walkie stackers** - A walkie stacker is the next stage up from a pallet jack or truck. The basic design is the same, except that the stacker is motorized. The ‘truck’ aspect of the walkie stacker is similar to the fork alignment and design of a forklift truck. The whole assembly can be moved around by hand, and pallets can be lifted to the second shelf of a warehouse stacking system. They are ideal for small capacity items, indoor use and on concrete floors. Walkie stackers are also less expensive than forklift trucks.
- **Platform trucks** - A platform truck is simply a frame and platform on wheels. The platform can be stacked by hand when a large number of small items require transportation, or can be loaded using another item of material handling equipment. This is ideal for small-to-medium size operations, or as a speedy logistical solution for large organizations.
- **Order Picker** - The order picker is a small-sized forklift truck that’s larger than a walkie stacker and is capable of bearing more weight. Order pickers can typically retrieve and replace stacked items from heights of between 10 – 30 feet.
- **Sideloader** - Sideloaders are used to load and unload from the side of the machine, as opposed to the front-positioned forks of a standard forklift. Sideloaders are best used in narrow aisles and doorways, but they are not as manoeuvrable as forklifts.
- **AGV** - The AGV is a mobile ‘robot’ that follows wires, markers or other indicators in the floor. AGVs can also use lasers, magnets or cameras for guidance. They are often used in large-scale industrial applications to move materials around a warehouse.

### 7.1.2. Bulk Material Handling Equipment

If your warehouse involves the movement of a large number of items, then the key to efficiency is movement in bulk. The more items you can move at one time, the more efficiently your warehouse will run. Here are some types of equipment that will enable you to do just that.

- **Conveyor belts** - A conveyor belt is a motor-driven belt that forms part of a conveyor system. Items that require transportation are simply placed on one end of the belt, and the motorized system moves them to their destination.
- **Stackers** - A small, hand-propelled or motorized truck that’s used to lift items off the ground and onto shelving. This is ideal if you are making the most of your warehouse space in having a stacking system. They are cheaper to run than forklifts, and are ideal for small-to-medium applications.

- **Reclaimers** - A machine that has a rotating scoop at one end of a conveyor system. The scoop gathers up small, loose items and places them on the conveyor belt. The items are then transported along the belt until they reach their destination.
- **Bucket elevators** - Also called a grain leg, a bucket elevator is used to transport small, loose items vertically. It is usually a motorized device, but can be hand-cranked as well. A series of small buckets are attached to a belt. The buckets scoop up the materials when at the bottom of the belt, then lift and disperse the materials at the top. Some bucket elevators may be inclined.
- **Grain elevators** - Grain elevators are towers that contain a bucket elevator or a conveyor. The grain is scooped up from a lower level and safely deposited in the required storage facility. This is ideal for large-scale operations.
- **Hoppers** - Another device for handling small, loose items, a hopper is basically a large funnel. The items are placed in the top of the hopper, and gravity moves them down to the bottom, which features a narrow aperture, which allows for flow control. The only disadvantage with hoppers is that they can become blocked fairly easily.
- **Silos** - Silos are typically used in agricultural applications. They are used to safely store grain, or silage (fermented feed). They are also commonly used for the bulk storage of coal, cement, wood-chips, sawdust and even food products.

## 7.2. Warehouse Areas

The warehouse areas will be of different sizes and specific activities of one type or another will be carried out there depending on the needs of the warehouse.

- **Loading and unloading area:** This is for the reception and dispatch of goods, and is one of the main areas of the warehouse. When this area is **integrated into the facility**, it allows direct access for goods transport vehicles, generally trucks, and also trailers and containers. The **loading and unloading areas of a warehouse** provide the facility with more agile and faster handling of the unit loads, but they must have sufficient space so that loading and unloading can take place simply and in total safety. If this area is integrated into the warehouse, it is where the loading and unloading bays are located. For agile flow of the goods, the use of this area must have **strict planning control so that trucks are not stationary**. When the loading and unloading area is not integrated into the facility, it is located in an outside space adjoining the warehouse. It is essential to have ample

floor space for vehicles to manoeuvre, to park, and for the trucks that transport the goods to move around quickly and orderly.

- **Goods reception area or warehouse entrance area:** Once the goods have been unloaded, a **quantitative** (ensuring that the number of units is correct) **and qualitative control of the goods** (level of quality, condition of the goods, etc.) is carried out in the reception area of the warehouse. After carrying out this control, the goods will be classified and distributed to another area of the warehouse. The separation of the warehouse's reception area ensures that the control and classification task is performed with greater precision.
- **Repackaging area:** The repackaging areas are located in those warehouses where it is necessary to repack or pallet rack the goods again. This may be due to the need to **reconfigure the unit loads to a different size** for storage system reasons or for hygiene and health reasons. This area of the warehouse is sometimes integrated into the warehouse entrance area.
- **Warehouse quarantine area:** Quarantine areas are usually more common in warehouses in the agri-food or pharmaceutical industries, whose products must undergo a more exhaustive and analytical control before being stored.
- **Storage area:** This is the place where the goods are deposited and is **one of the most complex areas of the warehouse**. It is important to know the rotation needs of the items in the warehouse and the type of goods. The load can be deposited and stacked directly on the ground (generally for solid or very heavy products like concrete bricks or other construction items), but this form of storage has limits on the strength, height and ease of stacking. That is why **industrial racking system** storage is presented as the option that fully optimises the warehouse space by **taking advantage of both space horizontally and at height**. The warehouse space can be exploited in different ways, but always considering the characteristics of the stored product. Direct access can be prioritised, as in the adjustable pallet racking system, or in fewer work aisles with compact systems such as **drive in racking** or **mobile pallet racking**, as an example. The storage area of a warehouse should facilitate the operation of the picking or order preparation area, if there is one.
- **Picking or order preparation area:** This is the area where the product is prepared for its subsequent transfer to the shipping area. Not all warehouses have a picking option, since this is only necessary if the goods that are shipped have a different configuration to when they are received. The picking or order preparation area can

be **an area of the warehouse in itself or be integrated in the storage area**. There are specific solutions for picking such as the **carton flow racking systems** or **longspan shelving**.

- **Area for dispatch and outflow control:** The warehouse dispatch area is the space in the facility where all the goods arranged in the order preparation area are packaged for subsequent sending to the customer. Control and verification of the goods is also carried out in this area, so that the order matches what has been prepared in the order preparation area and/or the customer's requirements. Similarly, the dispatch area is used for the accumulation of goods that will be loaded into the vehicles and that will leave the warehouse.
- **Warehouse technical area:** This is the place of maintenance of the technical and mechanical equipment used in the warehouse operations, such as forklifts or pallet trucks. For safety reasons, it is recommended that the technical area of the warehouse be located slightly apart from the other areas.
- **Warehouse administrative area:** These are the warehouse offices, the warehouse managers' workspace, the administrative, customer service and carriers' positions. In short, it is the organisational management area of the warehouse. Attached to this area is the service area of the warehouse team, which will include spaces such as changing rooms, the canteen, meeting rooms, etc.

### 7.3. Warehouse Today

Recent technological advancements have changed the face of every industry dramatically, even over the past several years. With convenience and customer experience at the forefront of retail logistics trends, warehouses and distribution centres have had to adapt to the evolving consumer landscape.

The rise of eCommerce has played a huge role in shaping the way warehouses operate, as have consumer expectations for speed of delivery, customization, product availability and much more. With the growing complexities of customer demands and the globalization of many retailers due to eCommerce, warehousing trends have shifted to keep up.

Gone are the days when warehouses stored a few specific products that would only be shipped within a 50-mile radius. Now, warehouses need to handle far more complex and diverse operations in order to meet the needs of their customers — which is only possible by embracing logistics trends and preparing ahead of time for the future of warehousing.

At Summit Storage Solutions, we think retailers should pay attention to these warehousing trends to keep their operations at their most profitable:

#### 7.3.1. Cloud-based Warehouse Management Systems

The more products, warehouses, distribution centres and employees you have to manage, the greater your need for a powerful warehouse management system (WMS). We recommend opting for a cloud-based WMS with all of the features you need to track your inventory and receive real-time analytics on all of your facilities.

Cloud-based WMS systems help you and your team stay organized by providing a centralized, secure space to store and access warehouse data. These functions are critical for successful warehouse operations, particularly if you manage multiple warehouses across the country or the globe.

#### 7.3.2. Adapting to Customer Preferences

In the age of instant, customized gratification, consumers are expecting more when it comes to retail. Whether it's B2C or B2B sales, customers are incredibly value-focused when it comes to product delivery. Experts believe that in order to meet customer expectations, warehousing trends will include an increase in dropshipping, faster time-to-delivery standards and an even sharper increase in value-added services (e.g., free shipping on certain products).

### 7.3.3. Investment in Automation

In order to meet the demands of fast-paced, eCommerce-driven retail operations, warehouses will continue to automate their processes wherever possible. For example, warehouses can implement robotic technology in warehouse operations and automate supply chain communication and the generation of financial and inventory reports, along with many other options.

Many customer services functions, such as virtual assistance and automated call centre services, are increasing retail efficiency as well.

### 7.3.4. Optimized Use of Space

If they want to keep up with the growing warehouse logistics trends, companies need to ensure that their warehouses function optimally from within. Optimizing warehouse storage space is key to both maximizing warehouse capacity and increasing storage and operations efficiency. Warehouses can implement vertical storage carousels, custom racks, flat storage systems and more to create a safe, efficient warehouse environment.

## 8. Documentation and Finance

When items are transported either domestically or internationally the delivery must be accompanied by the relevant documentation. The amount of documentation varies depending on if the shipment is within England or to another country.

As far as interstate transportation of goods, there are several documents that are of the greatest importance.

### 8.1. Documents in Foreign Trade

The documents required for international shipping, it's the requirements you need to successfully deliver goods and make money.

With that in mind, here are some standard documents you need to understand in order to be successful.

- **Pro Forma Invoice** - A pro forma invoice is a preliminary bill of sale sent to buyers in advance of a shipment or delivery of goods. The invoice will typically describe the purchased items and other important information, such as the shipping weight and transport charges. Pro forma, Latin for “as a matter of form” or “for the sake of form,” invoices often come into play with international transactions, especially for customs purposes on imports.
- **Commercial Invoice** - Commercial invoice is a customs document. It is used as a customs declaration provided by the person or corporation that is exporting an item across international borders.[1] Although there is no standard format, the document must include a few specific pieces of information such as the parties involved in the shipping transaction, the goods being transported, the country of manufacture, and the Harmonized System codes for those goods. A commercial invoice must often include a statement certifying that the invoice is true, and a signature. A commercial invoice is used to calculate tariffs, international commercial terms (like the Cost in a CIF) and is commonly used for customs purposes. Commercial invoices in European countries are not normally for payment. The definitive invoice for payment usually has only the words "invoice". This invoice can also be used as a commercial invoice if additional information is disclosed.
- **Packing List** - The packing list identifies items in the shipment and includes the net and gross weight and dimensions of the packages in both imperial and metric

measurements. It identifies any markings that appear on the packages, and any special instructions for ensuring safe delivery of the goods to their final destination.

- **Certificates of Origin** - A certificate of origin (CO) is a document declaring in which country a commodity or good was manufactured. The certificate of origin contains information regarding the product, its destination, and the country of export. For example, a good may be marked “Made in the USA” or “Made in China”. Required by many treaty agreements for cross-border trade, the CO is an important form because it can help determine whether certain goods are eligible for import, or whether goods are subject to duties.
- **Shipper’s Letter of Instruction** - A Shipper’s Letter of Instruction (SLI) is a ‘letter’ from the exporter instructing the freight forwarder on how and where to handle the export shipment. The exporter is granting permission to the forwarder to act as the authorized forwarding agent for U.S. export control and customs.
- **Bills of Lading** - A bill of lading (BL or BoL) is a legal document issued by a carrier to a shipper that details the type, quantity and destination of the goods being carried. A bill of lading also serves as a shipment receipt when the carrier delivers the goods at a predetermined destination. This document must accompany the shipped products, no matter the form of transportation, and must be signed by an authorized representative from the carrier, shipper and receiver.
  - Inland Bill of Lading - An inland bill of lading is often the first transportation document required for international shipping created for your export. It can be prepared by the inland carrier or you can create it yourself. It’s a contract of carriage between the exporter and the shipper of the goods that states where the goods are going; it also serves as your receipt that the goods have been picked up. In an international shipment, the inland bill of lading is not typically consigned to the buyer. Instead, it is consigned to the carrier moving the goods internationally or, if not directly to the carrier, to a forwarder, warehouse or some other third party who will consign your goods to the carrier when ready.
  - Ocean Bill of Lading - If your goods are shipping by ocean vessel, you’ll need an ocean bill of lading. An ocean bill of lading can serve as both a contract of carriage and a document of title for the cargo. There are two types:
    - A **straight bill of lading** is consigned to a specific consignee and is not negotiable. The consignee takes possession of the goods by presenting a signed, original bill of lading to the carrier.

- A **negotiable bill of lading** is consigned “to order” or “to order of shipper” and is signed by the shipper and sent to a bank in the buyer’s country. The bank holds onto the original bill of lading until the requirements of a documentary collection or a letter of credit have been satisfied.
- Air Waybill - Goods shipped on a plane require an air waybill. Unlike an ocean bill of lading, an air waybill cannot be negotiable. It is a contract of carriage between the shipper and the carrier.
- **Dangerous Goods Forms** - Dangerous goods, abbreviated DG, are substances that when transported are a risk to health, safety, property or the environment. Certain dangerous goods that pose risks even when not being transported are known as hazardous materials (syllabically abbreviated as HAZMAT or hazmat). Hazardous materials are often subject to chemical regulations. Hazmat teams are personnel specially trained to handle dangerous goods, which include materials that are radioactive, flammable, explosive, corrosive, oxidizing, asphyxiating, biohazardous, toxic, pathogenic, or allergenic. Also included are physical conditions such as compressed gases and liquids or hot materials, including all goods containing such materials or chemicals, or may have other characteristics that render them hazardous in specific circumstances.
- **Bank Draft** - The term bank draft refers to a negotiable instrument that can be used as payment just like a check. Unlike a check, though, a bank draft is guaranteed by the issuing bank. The total amount of the draft is drawn from the requesting payer's account—their bank account balance decreases by the money withdrawn from the account—and is usually held in a general ledger account until the draft is cashed by the payee. Bank drafts provide the payee with a secure form of payment.

## 8.2. Import Instructions

An import is a good or service bought in one country that was produced in another. Imports and exports are the components of international trade. If the value of a country's imports exceeds the value of its exports, the country has a negative balance of trade (BOT), also known as a trade deficit.

### 8.2.1. How to bring goods from any country, including how much tax and duty you'll need to pay and whether you need to get a licence or certificate?

- **Step1: Check if you need to follow this process** - Follow these steps if you're moving goods permanently to:
  - getting goods through the post;
  - bringing goods in your luggage for personal use;
  - bringing goods in your luggage, car or van to use in your business or sell;
  - bringing in goods temporarily;
  - moving to the UK with your belongings.
- **Step2: Get your business ready to import - Check the business sending you the goods can export to your country.** - The business sending you the goods may need:
  - to make an export declaration in their country
  - licences or certificates to send goods to the UK

Check whoever is sending the goods is able to export them from their country.
- **Step3: Decide who will make customs declarations and transport the goods** - You can hire someone to deal with customs and transport the goods for you, or you can do it yourself. Most businesses that import goods use a transporter or customs agent. **Find out the commodity code for your goods** - You'll need to include the commodity code on your import declaration. This will determine the rate of duty you need to pay and if you need an import licence. You'll need to include the commodity code on your import declaration. Your customs agent or transporter might be able to help you with this. **Work out the value your goods** - When you make your import declaration, you'll need to include the value of your goods - this helps work out how much duty and VAT you'll need to pay.
- **Step5: Find out if you can delay or reduce your duty payment** - If your country has a trade agreement with the country you're importing from, you may be able to pay less duty or no duty on the goods (known as a 'preferential rate'). You may also be able to delay or reduce the amount of duty you pay based on what the goods are from and what you plan to do with them.
- **Step6: Check if you need a licence or certificate for your goods** - There are special rules and you may need to get licences or certificates if you are importing any of the following:
  - animals and animal products
  - plants and plant products

- high risk food
  - veterinary medicines
  - human medicine
  - controlled drugs
  - tissues and cells for human application
  - waste
  - products containing F gas
  - precursor chemicals
  - hazardous chemicals
  - nuclear material
  - guns, knives, swords and other weapons
  - weapons and goods that could be used for torture or capital punishment.
- **Step7: Check the labelling, marking and marketing rules** - Check the marking, labelling and marketing standards for food, plant seeds and manufactured goods.
  - **Step8: Get your goods through customs** - If you've appointed someone to deal with customs for you, they'll make the declaration and get your goods through the border. Make an import declaration yourself and get your goods cleared by customs.
  - **Step9: Claim a VAT refund** - If you're VAT registered, you can claim back any VAT you paid on the goods you've imported. You'll need your Import VAT Certificate (C79).
  - **Step10: If you paid the wrong amount of duty or rejected the goods** - Claim a refund on import duties or make a claim for rejected imports.
  - **Step11: Keep invoices and records** - You must keep records of commercial invoices and any customs paperwork, including your Import VAT Certificate (C79).

### 8.3. Payment Methods

In order to become successful in today's global marketplace, exporters should provide their customers with appealing sales terms supported by suitable payment methods. The ultimate goal is getting paid in full and on-time for each export sale. An applicable payment method must be chosen carefully to reduce the payment risk while also fulfilling the needs of the buyer.

There are a variety of ways that payments can be made, including a different level risk for collection. We will try to explain these methods from most secure to least secure for exporters.

- **Advance payment** is a type of payment made ahead of its normal schedule such as paying for a good or service before you actually receive it. Advance payments are sometimes required by sellers as protection against non-payment, or to cover the seller's out-of-pocket costs for supplying the service or product. There are many cases where advance payments are required. Consumers with bad credit may be required to pay companies in advance, and insurance companies generally require an advance payment in order to extend coverage to the insured party.
- **Cash on delivery (COD)** is a type of transaction in which the recipient makes payment for a good at the time of delivery. The terms and accepted forms of payment vary according to the payment provisions of a purchase agreement. Cash on delivery can also be referred to as collect on delivery since delivery may allow for cash, check, or electronic payment.
- **Open account** occurs when a seller ships the goods and all the necessary shipping and commercial documents directly to a buyer who agrees to pay a seller's invoice at a future date. Open account is typically used between established and trusted traders.
- **Documents Against Payment** is a terms of payment arrangement in which an exporter entrusts the ownership documents of an asset to his/her bank, which then presents them to an importer only after the bank has received payment for the asset. Essentially, the bank holds hostage the ownership documents, which the importer needs to take possession of the merchandise, until the bank, and, by extension, the exporter, are paid. A risk for the exporter is the possibility that the importer will refuse to pay, and, while he/she will not be able to take possession of the merchandise, the exporter has little legal recourse. The terms of this agreement are set between the importer and exporter at the time of the sale.
- **Documentary Credit** is a payment technique whereby a bank commits itself, on behalf of its client (the importer), to pay to a beneficiary (the exporter) within a fixed period,

the price of goods / services against the delivery by the exporter of previously agreed and compliant documents proving the value and shipment of the goods / services.

- **Bank guarantee** is a type of financial backstop offered by a lending institution. The bank guarantee means that the lender will ensure that the liabilities of a debtor will be met. In other words, if the debtor fails to settle a debt, the bank will cover it. A bank guarantee enables the customer, or debtor, to acquire goods, buy equipment or draw down a loan.

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## CONCLUSÃO

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## Conclusão

Logistic service providers ensure that all the above-mentioned services along with other activities associated with logistics go on smoothly. This requires a lot of determination and a great deal of time management, coordination, and organization. Many logistics service providers have strived hard for perfecting this over the years. All you have to do is look for the right one so that your business can flourish.

Job advertisements are often used by job seekers during the early stages of recruitment to gather organizational and job information. Much scholarly work has been devoted to understanding how and why these recruitment materials affect job seekers. This chapter reviews the theoretical approaches commonly used to explain job advertisement effects, as well as empirical findings relating job advertisements to a variety of important recruitment outcomes. In addition, we offer suggestions for future research to provide a more complete picture of how recruiting organizations can use job advertisements to enhance recruitment success.

Logistics is a very diverse and complex industry. It involves many modes of transportation and ways of shipping goods. Sometimes, it may be challenging for a company to choose the right mode of transportation to reach the best result. It can be especially difficult if you are new to domestic or global shipping. However, knowing the differences and benefits of each shipping method will help you define the option that will work best for you.

There is a large amount of heavy labour involved at logistics worksites, such as in loading, unloading, and transporting cargo. Material handling device is a general term for the machines used to make this logistics work more efficient. These machines perform a variety tasks including moving raw materials, works in process, and completed products. There are many material handling devices used at logistics worksites. These include forklifts, carts, pallets, conveyors, conveyance robots, sorters, picking systems, and automated warehouses.

It's not as simple as it may seem to simply adopt the latest technologies for today's warehouses. In terms of design, existing facilities typically have legacy designs and layouts, so to be successful new automation must be both flexible and minimally disruptive without significant increases in capital expenses.

Finally, labour shortages mean that warehouse will look to ways to increase productivity, automation tools that are simple to use and easy to train workers on and change the nature of the work in order to attract new labour.

Warehouses have played an integral role in the supply chain for decades, yet there's no chance the warehouse will become obsolete. Instead, the future looks bright for the industry as innovative,

forward-thinking companies pave the way for the warehouse of the future by embracing the latest advancements in technology.

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