LECTURE 2.

Material flows, logistics operations and systems

Logistics is the task of managing two key flows: **material flow** and **information flow**. The logistics task of managing material flow and information flow is a key part of the overall task of supply chain management.

The example for material flow and information flow is described as follows:

The concept of a supply chain suggests a series of processes linked together to form a chain. A typical Tresco (UK's largest food retailer) supply chain is formed from five such links.

Materials

 are the elements, constituents or substances of which something is composed or can be made. Beside raw materials, also documents, evidence, certificates or similar things may serve as materials.

Dimensions of a Good

The nature of goods

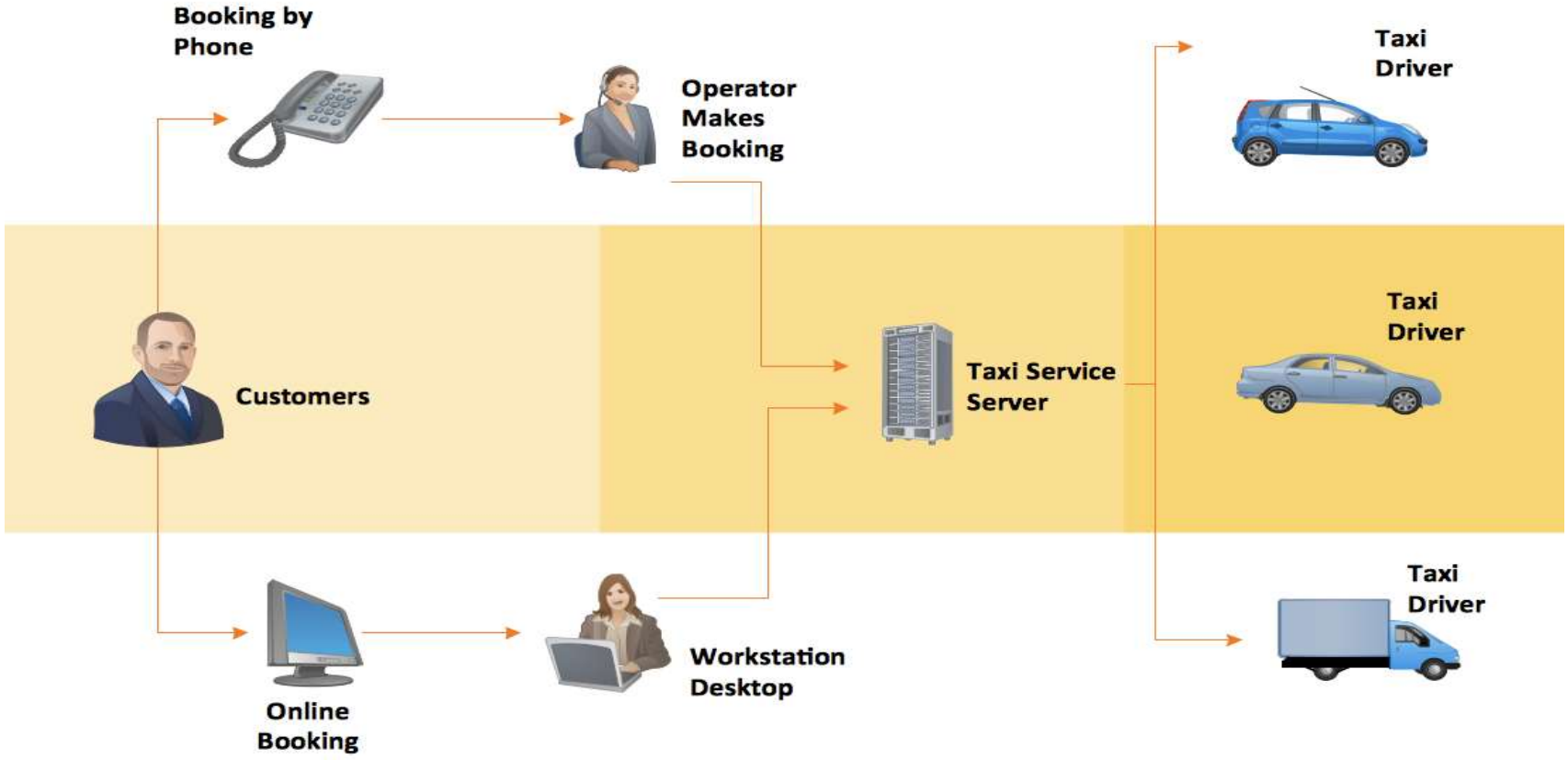
 Material *goods are produced or* traded mainly by companies in the industrial sector.

 Goods of a non-material nature, such as **information**, tend to be produced, compiled or traded by companies in the *service industry* sector.

- **Material flow defined**
  Material flow management (MFM) is a method of efficiently managing materials.
  Material flow management is the goal oriented, efficient use of materials, material streams and energy. The goals are given by ecological and economical areas and by observing social aspects.
- Material flow is the flow of physical goods from suppliers through the distribution centers to stores.

Information flow defined

Information flow is the flow of demand data from the end-customer back to purchasing and to suppliers, and supply data from suppliers to the retailer, so that material flow can be accurately planned and controlled.



Logistics system

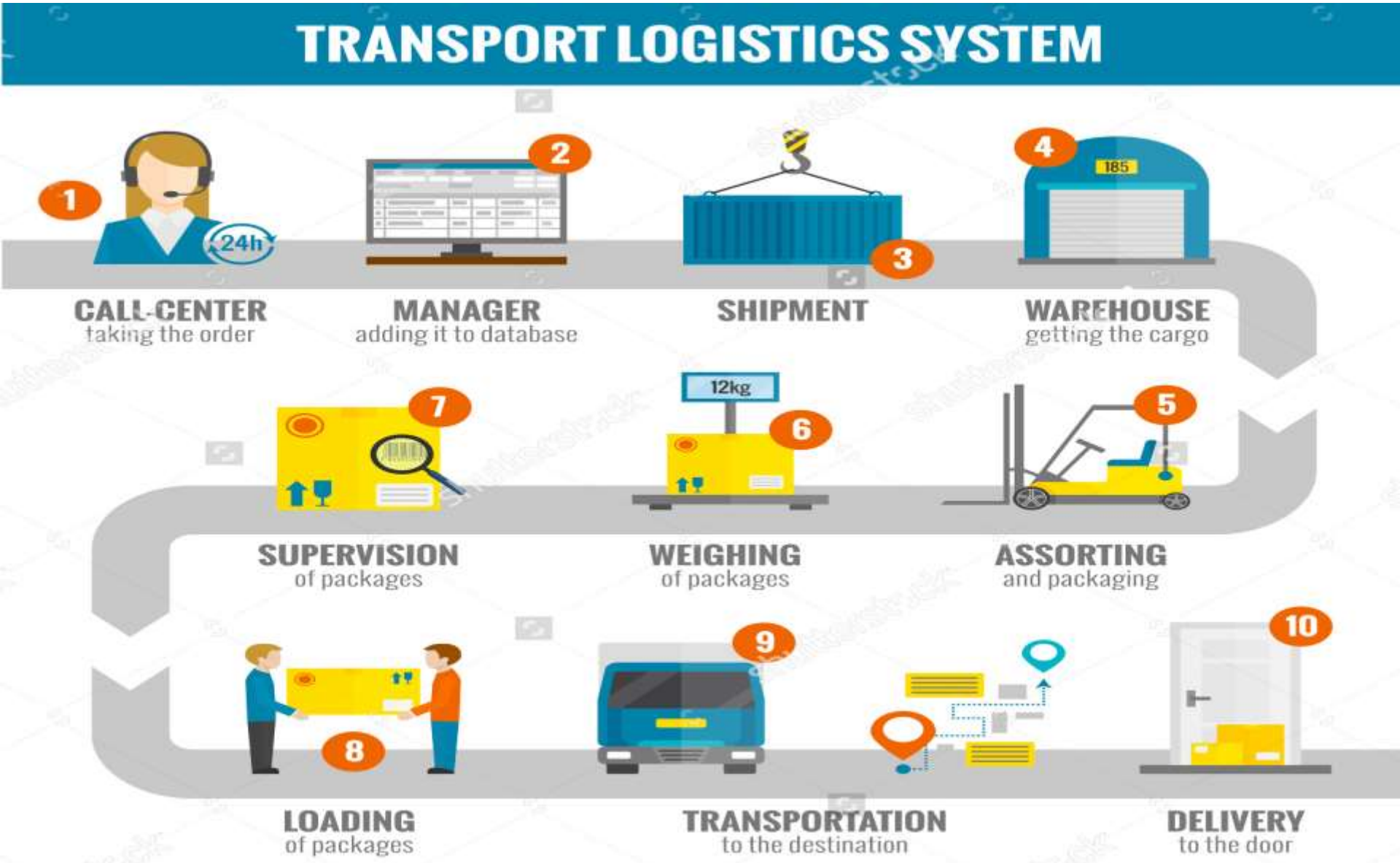
System - a set of elements in a relationship and communication with each other forming a certain integrity, unity.
Logistic system - an adaptive feedback system to perform certain logistical operations. It consists of several sub-systems and has developed links with the environment.
The purpose of the logistics system - delivery of goods and costs in a given place, in the right quantity and range as far as possible prepared for production or personal consumption for a given level of costs.

The logistics system consists of the following components: **Customer service, Inventory management, Transportation, Storage and materials handling, Packaging, Information processing, Demand forecasting, Production planning, Purchasing, Facility location and other activities.**

Other activities for a specific organization could include tasks such as after-sales parts and service support, maintenance functions, return goods handling and recycling operations.

In the picture are shown the components of a logistics system.

Example



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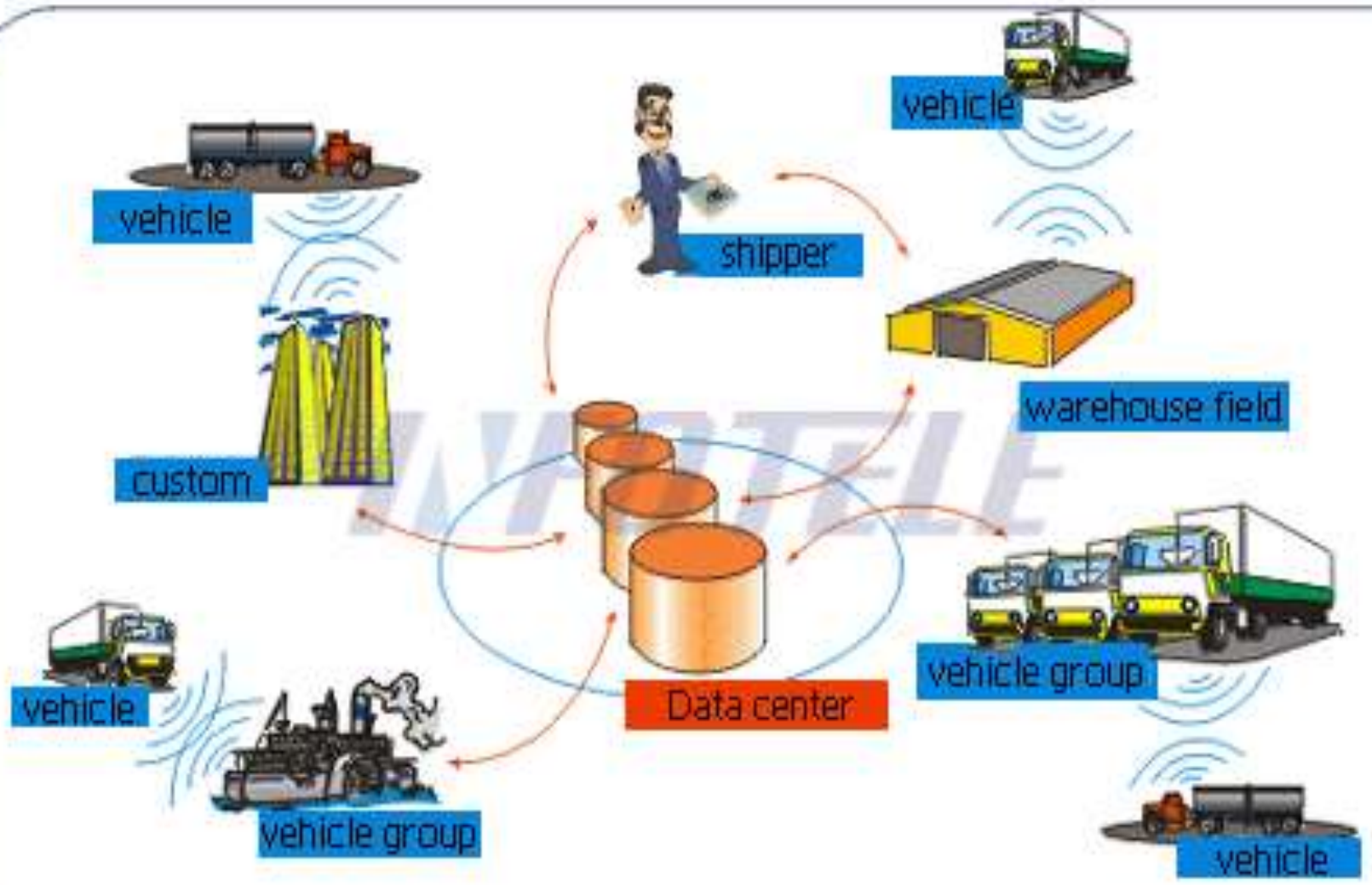

Logistic System In Oceanshipment Port

Logistics operations - is any action related to the emergence, transformation and absorption of the material and the accompanying information and financial flows.

Logistics operations can be classified into five main areas:

Development of a Support Solution;
Acquisition of Materiel: Initial purchase and reprovisioning;
Management of Resources; Warehousing; Distribution and Redistribution of materiel;
Maintenance (Repair or Overhaul);

Disposal.

Types of logistics operations

There are ***complex*** and **elementary operations**. In turn, complex operations are ***basic, key and auxiliary***.

Basic operation - is purchasing (procurement), production, sales.

Key operations related to the management of orders procedures, procurement, inventory, production procedures, physical distribution.

Auxiliary operations - a storage operation, cargo handling, packaging, ensuring the return of the goods, the collection of returnable waste, information and computer information and other service.

Elementary operations - is loading, unloading, bagging, transportation, receipt and release from the warehouse, storage, handling, sorting, labeling.

Logistics operations include activities such as loading, unloading, bagging, transportation, receipt and release from the warehouse, storage, transfer from one mode of transport to another, assembly, sorting, consolidation, subdivision, etc. N. Of logistics operations, related information and financial flows, the accompanying material may be the collection, storage, transmission of information on material flow, reception and transmission of orders for information channels, payments to suppliers, purchasers of goods and logistics intermediaries, cargo insurance, operations of customs clearance and so on.