



CAD COMPUTER-AIDED MATERIAL HANDLING

BACKGROUND TO LOGISTICS AND TYPICAL CHALLENGES

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Lifelong Learning Programme

Disclaimer

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CHALLENGES

Introduction

Internal Logistics and Material Handling

Packaging

Storage & Warehousing

Transportation

ED
HANDLING
SYSTEMS
RAUGHTING
ICS
SOLIDS

INTRODUCTION

The process of planning, implementing, and controlling procedures for the efficient and effective transportation and storage of goods including services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements.

This definition includes inbound, outbound, internal, and external movements.¹

- The origin of the term logistics comes from the French word "logistique," which is derived from "loger" meaning quarters (as in quartering troops).

¹ Council of Supply Chain Management Professionals (CSCMP)

LOGISTICS

Consumer



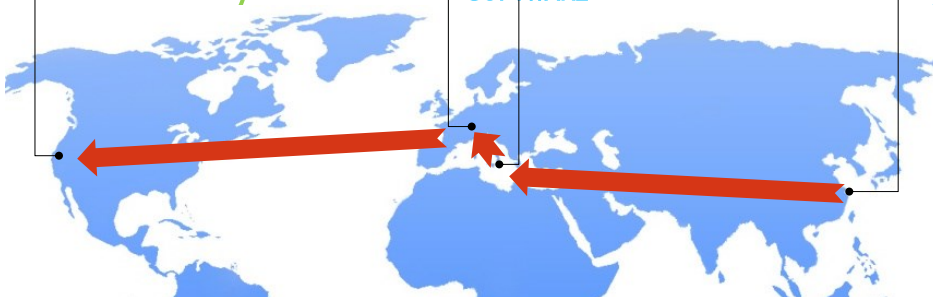
Warehouse



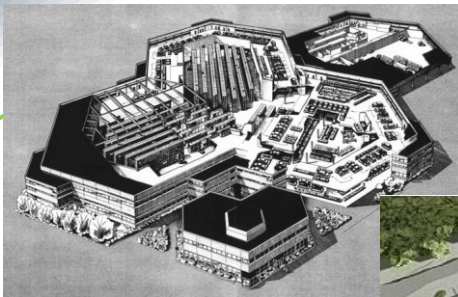
Supplier



CAD COMPUTER-AIDED
Production Facility
MOD
COMPL
ANIMAT
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SOLIDS



INTERNAL LOGISTICS



Volvo Kelmar Plant

The internal movement of material from one location to another within a plant.

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MATERIAL HANDLING

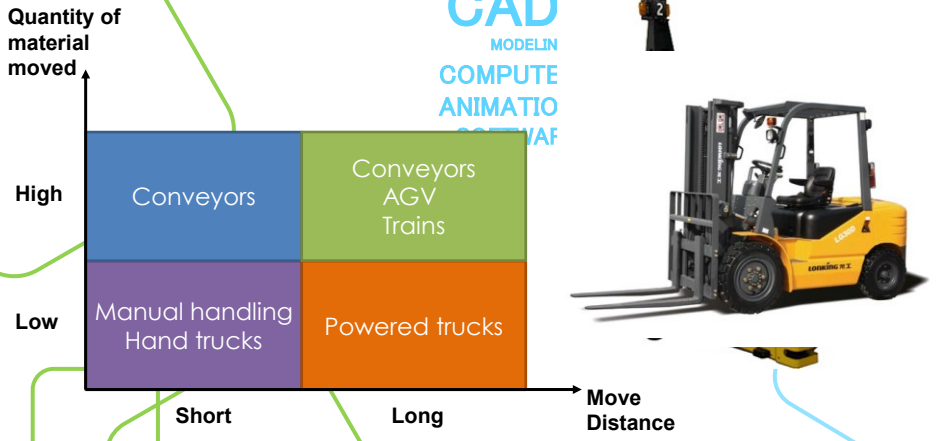


- Optimized Plant Layout
- Process Plans
- Inventory Planning

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MATERIAL HANDLING

Material handling is the function of moving the right material to the right place in the right time, in the right amount, in sequence, and in the right condition to minimize production cost.



PACKAGING

Consumer Packaging



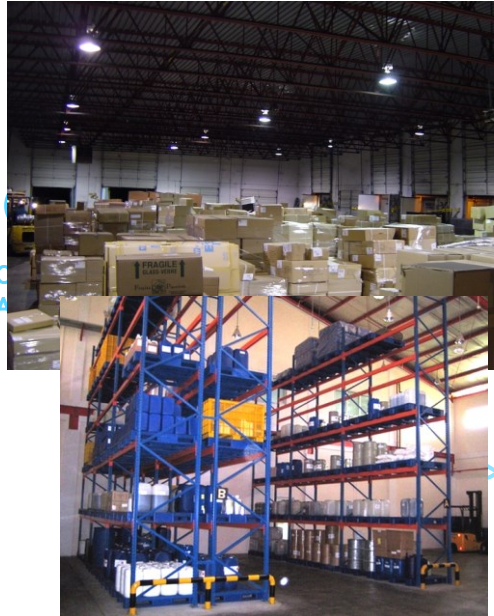
Transportation Packaging



WAREHOUSING

Functions in the warehouse:

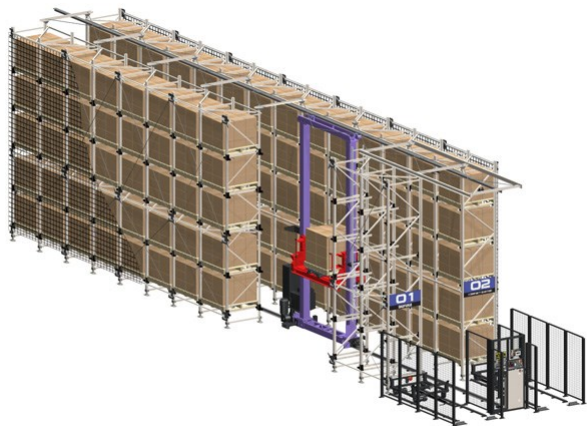
- Receiving
- Inspection and quality control
- Repackaging
- Put away
- Storage
- Order picking
- Postponement
- Sortation
- Packing and Shipping



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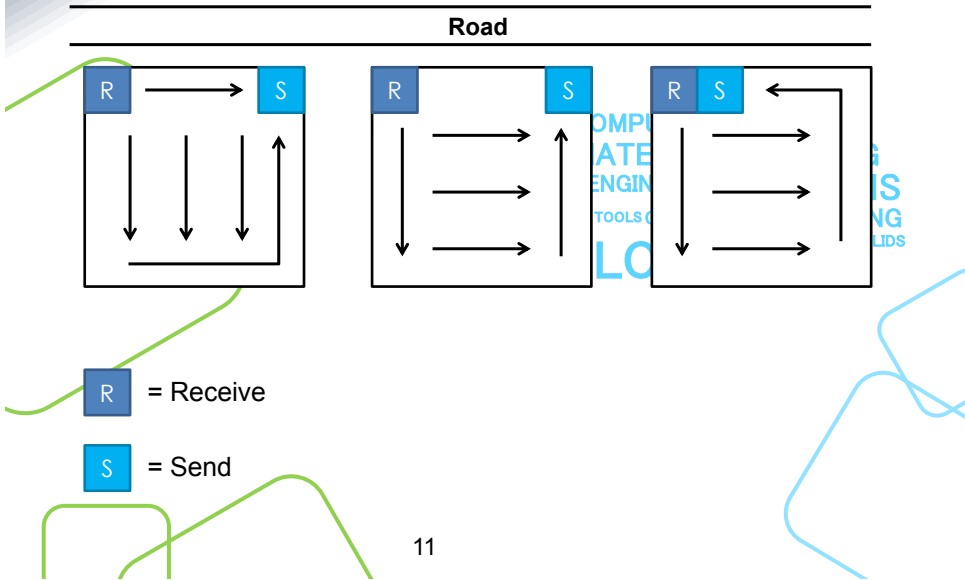
AUTOMATIC STORAGE SYSTEMS

- o An ASRS, is a combination of equipment and controls that handles, stores, and retrieves materials with precision, accuracy and speed.

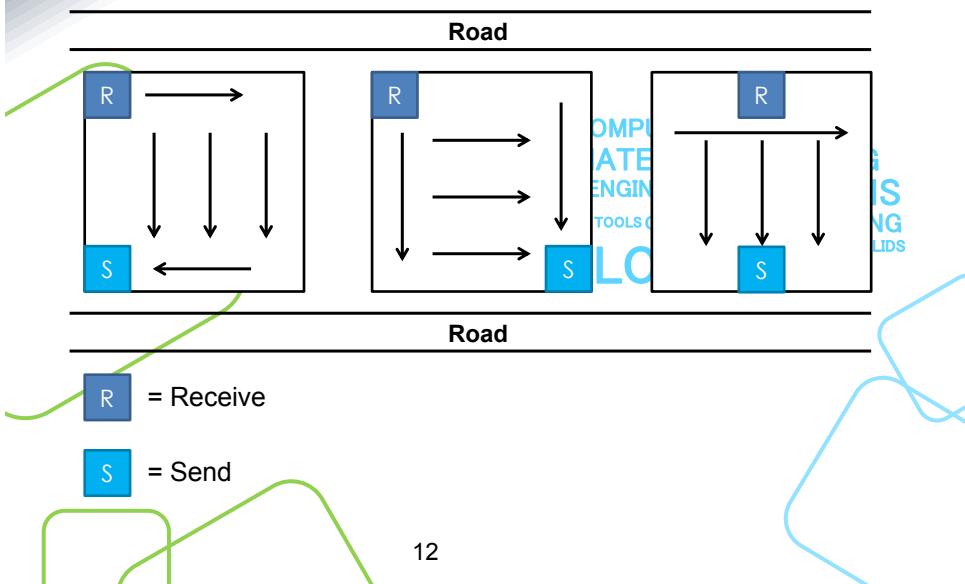


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WAREHOUSING LAYOUT DESIGN



WAREHOUSING LAYOUT DESIGN



WAREHOUSING LOADING DOCK

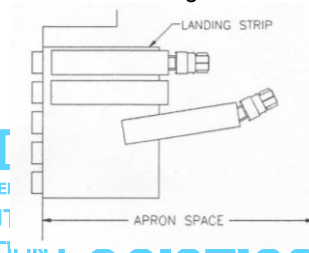


Loading Dock Design:

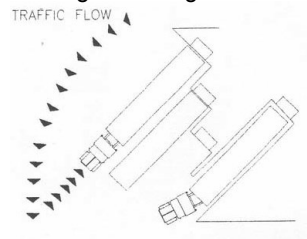
- Trailer Heights
- Container Sizes
- Dock Approach
- Seals/Shelters

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90° Configuration



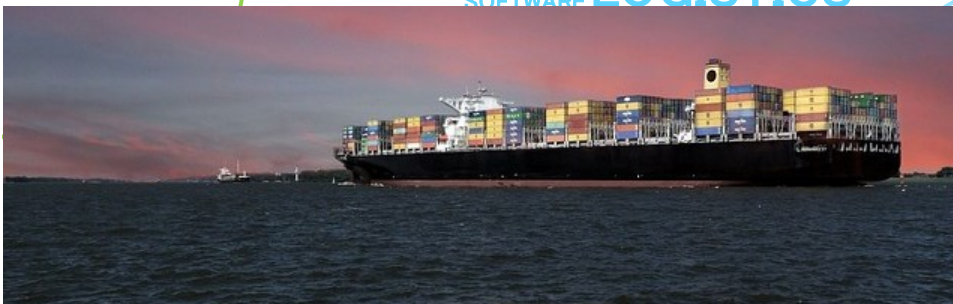
Angled Configuration



TRANSPORTATION

- o Mode of Transportation:
 - o Land
 - o Air
 - o Sea
- o Means of Transportation:
 - o Trailer
 - o Cargo Ship
 - o Cargo Plane

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MODELING MATERIAL HANDLING
ENGINEERING SYSTEMS
COMPUTER TOOLS GEOMETRY DRAUGHTING
ANIMATION SOLIDS
SOFTWARE LOGISTICS



TRANSPORTATION

- Space utilization within:
 - Holds
 - Containers
 - Transport equipment



<http://mediaarchive.ksc.nasa.gov>



CASE STUDY

VW Glaeserne Fabrik in Dresden, Germany



Assembly plant for: VW Toureg, Phaeton

<http://www.glaesernemanufaktur.de/>

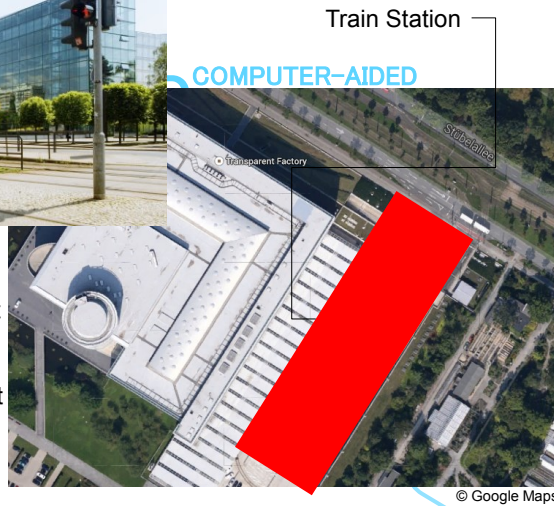
CASE STUDY

- Transportation of raw material



THE LOGISTICS CONCEPT – THE CARGO TRAM

Volkswagen also took into account the sensitive traffic situation in the city of Dresden by developing a sophisticated logistics concept that avoids interfering with inner city traffic and introducing more exhaust fumes into the environment.



CASE STUDY

- Internal Logistics



- Transfer Lines

- Conveyor Belts

- Lifts

- AGVs



CASE STUDY

Automated Vehicle Storage and Retrieval System




<http://www.glaesernemanufaktur.de/>

CONCLUSION



- Internal Logistics and Material Handling
- Storage & Warehousing
- Transportation

There are many challenges in Logistics...
Start learning how to apply new technologies to address these challenges



Thanks for your attention
Any Questions?

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MODELING ENGINEERING SYSTEMS
COMPUTER GRAPHICS MANUFACTURING
ANIMATION LOGISTICS SOLIDS
SOFTWARE

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