# Intralogistics Optimization – Examples

**Case studies** 2024





# The in-house supply processes are optimized according to the line back planning principle

#### Approach for intralogistics optimization

#### "Line-back-approach" – Direction of optimization

The process is designed "from the inside out", from the point of value creation to the upstream logistics processes



Intralogistics optimization

An optimized material provision increases the efficiency by increasing the proportion of value adding activities

Production driven material provision

#### **Traditional material provision**



- Many parts are provided in large containers to be available for multiple shifts
- Worker leaves assembly area to fetch material
- Worker checks which variant is to be assembled and look for matching parts increasing exposure to human errors
- The cycle duration is determined by material at the line
- Ergonomically poor provision

#### **Optimized material provision**



- Presentation mostly in small load carriers
- Material is within the worker's reach at the assembly area
- Only the correct variant can be taken without possibility for human errors
- Minimal, fixed cycle duration
- Presentation at optimum working height

3

# Lean internal logistics creates consistent delivery in flow with production

# 2

#### **Clocked internal logistics**

#### **Traditional internal logistics**



- Non-cyclical, individual transportation
- High proportion of empty runs (40 45%)
- Forklift trucks as a means of transportation
- Wide lanes
- Large batch sizes in large load carriers or lattice box pallets
- No separation of value-added activities and activities which do not create value
- Mostly undefined stocks in circulation and surface coverage

## Lean internal logistics



- Cyclical supply, consolidated shipments
- Low proportion of empty runs
- Towing tractor as a method of transportation
- Narrower lanes possible by means of oneway systems
- Smaller batch sizes in small load carriers
- Work according to the "surgeon/nurse principle"
- Reduction in the cycled stock and occupied area

Supermarkets lead to a reduced stock and increase productivity, while still being a buffer between in-house and inbound processes **Traditional high rack warehouse** 



- Usually undefined, large amounts of stock
- Non-transparent area assignment
- Productivity losses due to slow retrieval times
- Piling of stocks
- Long times spent searching and en route

#### Lean supermarket



- Separation of storage and kitting
- Defined stocks
- Transparency in area assignment
- Increase in productivity (logistics)
- No piling, observance of FIFO<sup>1</sup>
- Reduced times spent searching and enroute

Implementing the supermarket

# 1-step goods receipt balances the utilization while reducing the number of handling steps at the same time

#### **Traditional goods receipt**



- Overloading the employees at delivery peaks
- Waiting time during the remaining course of the day
- Employee capacities must be kept available for capacity utilization peaks



- Handling stages from unloading the truck to loading the route train
- Large space requirement

#### Lean approach



 Even capacity utilization of employees via synchronized processes



 1-step goods receipt leading to reduction of employee capacities and area

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1-step goods receipt

# All relevant cost drivers must be considered to define the total cost optimal delivery volume

#### **Traditional approach**



- Mindset "Large quantities create security"
- Low delivery frequency
- High delivery quantity and stocks

#### **Cost optimal approach**



- Mindset "Passing on quantities at optimal cost."
- Increased delivery frequency
- Total optimum from delivery quantity, transport and inventory costs

Optimized inbound concept



# Do not hesitate to contact the experts...

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