

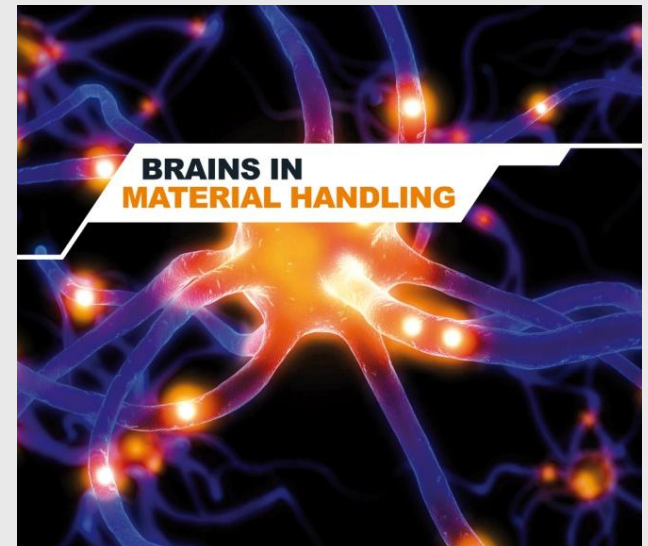
Warehouse Automation en order verzamelen

Picking workstation

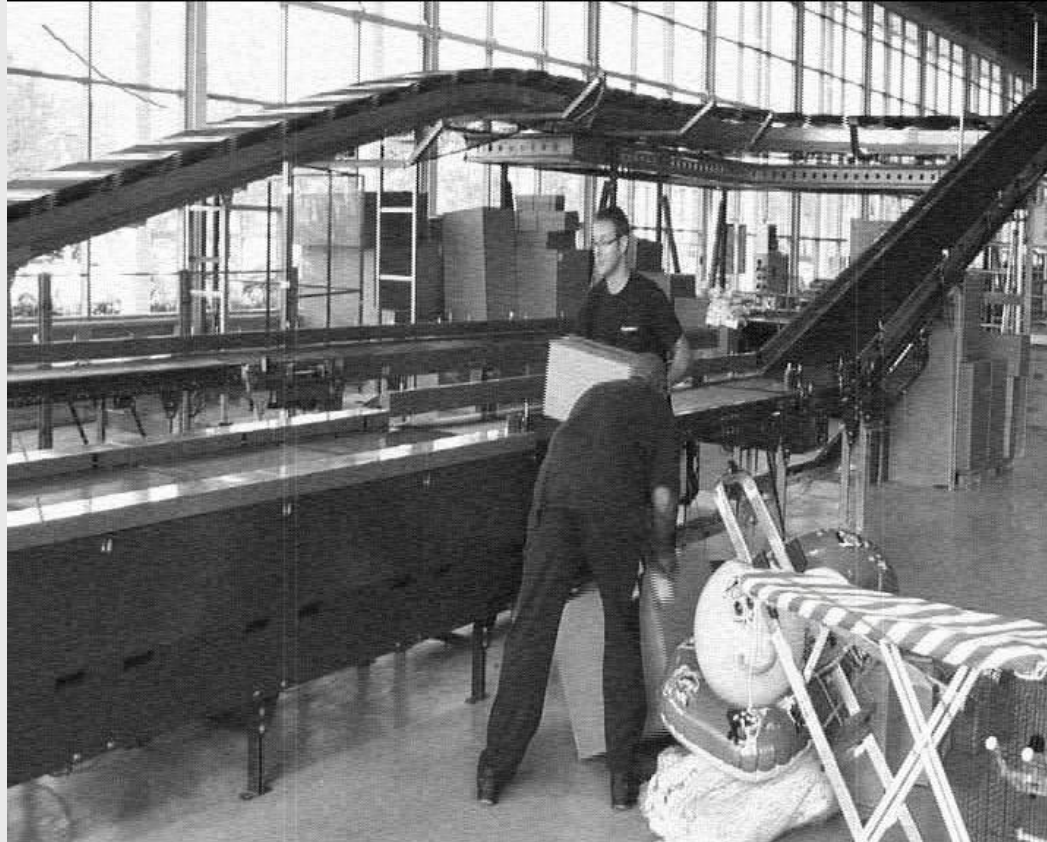


Contents

- **Introduction**
- Warehouse automation
- Best Practices
- Summary



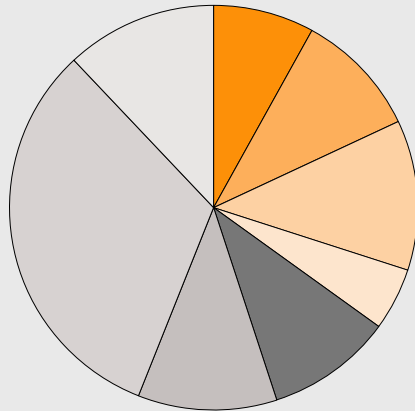
Introduction



Man and machine.....*in modern times* (Charlie Chaplin, 1936)

Introduction

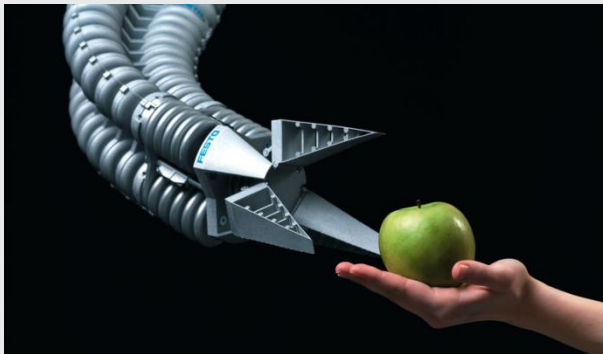
In a world of technology, a belief in people



12% Other
32% Maintenance / Services
11% Project Management
10% Logistics / Manufacturing

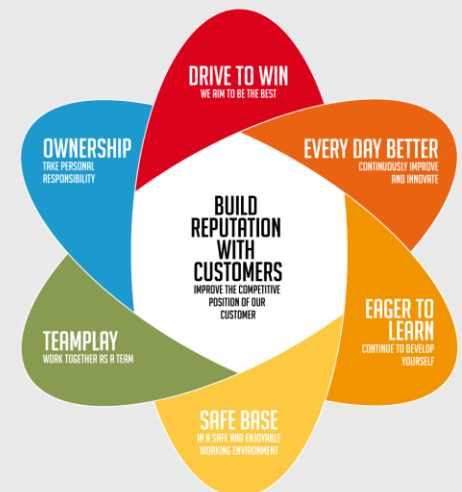
System Design / Sales Engineering 8%
Engineering 10%
Software Engineering 12%
R&D 5%

Man and refined technology



working closely together:

- In design
 - with partners
- In operation
 - with customers



Introduction

1^e Material Handling Forum, maart 2011

Gezond en Productief Orderpicken

- Marktvraag, eisen en ontwikkelingen (VI)
- Werkstation: 250 – 500 OL / uur (VI)
- Ergonomie en Werkstations (TNO)
- Duurzame productiviteit (TNO)
- Project en productiviteit (VI)



Introduction - Workstation & Operator interaction

- **1 (horizontal) Level Picking**

- 95% of all arm movement below 60 degrees arm-shoulder-body angle

- **Adjustable working height for operator**

- P5: woman 154 cm
- P95: man 199 cm
- 90% of European population

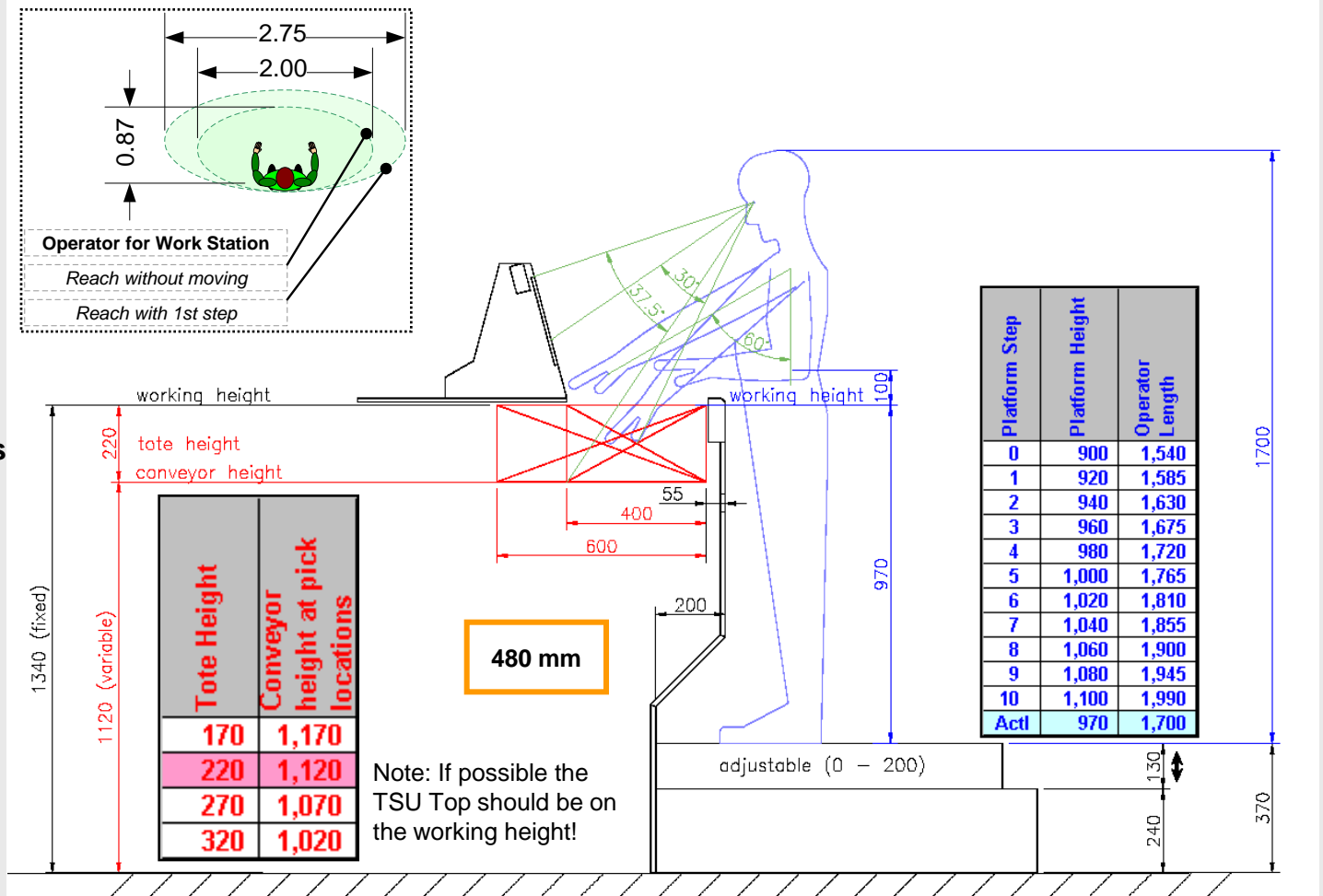
- **35 – 40 degrees information-hand-product angle on eyes**

- Prevent up/down movements of head/neck.

- **Cockpit / Straight-line workstation model**

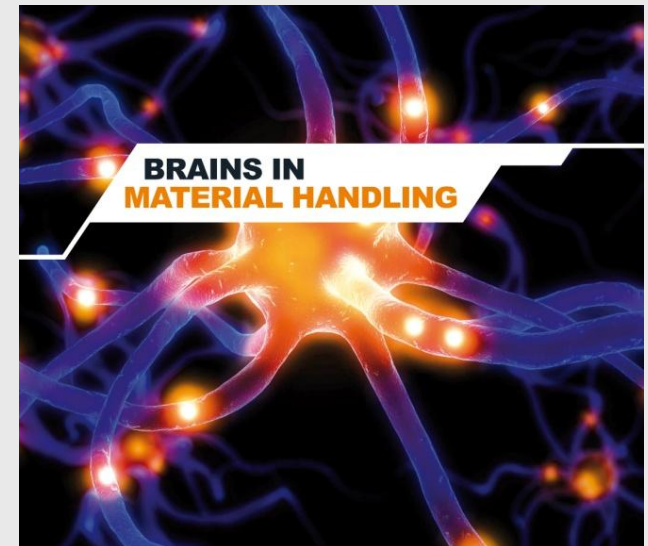
- For pick capacity over 250 / hr
- Supports natural arm and body movements

PICK@EASE work station principles



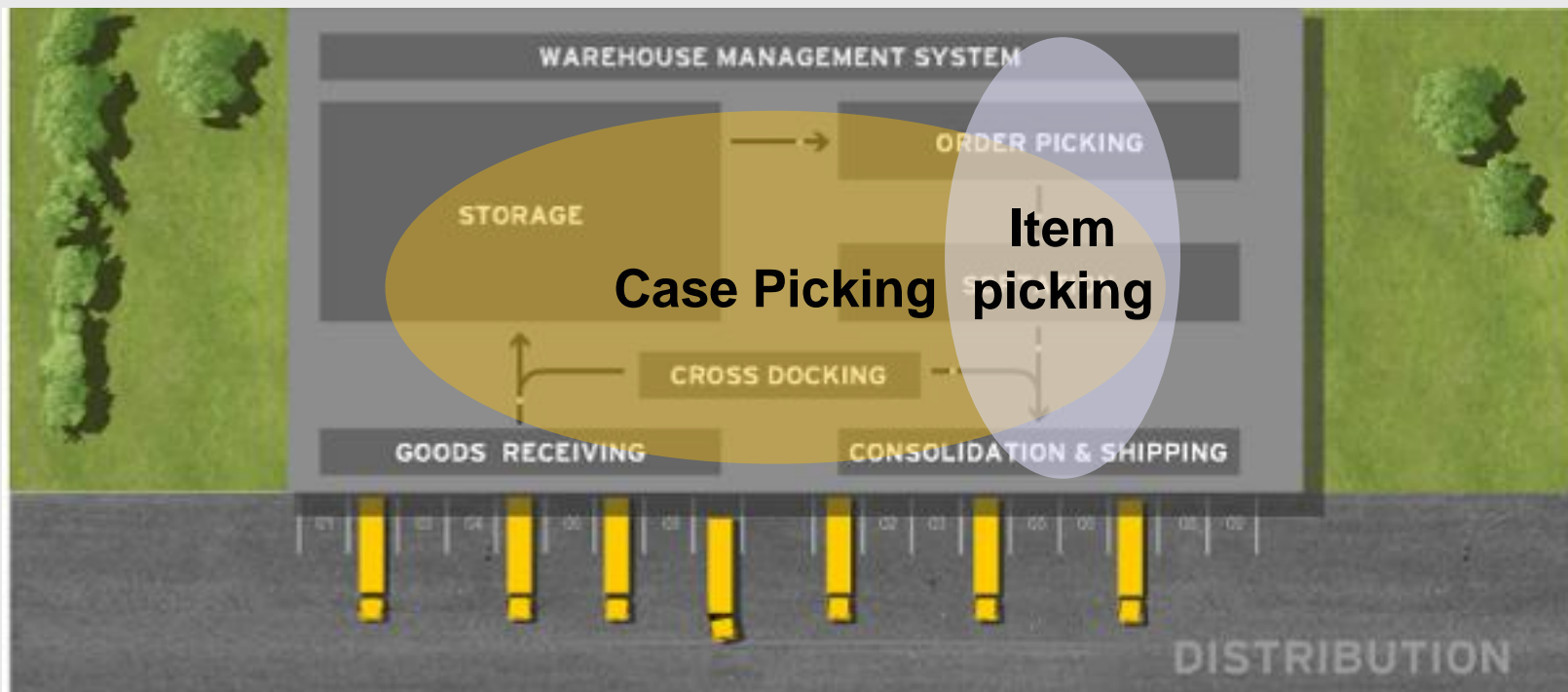
Contents

- Introduction
- **Warehouse automation**
 - Item & Case picking
 - Added Value
 - Automated Item Picking
- Best Practices
- Summary



Warehouse Automation

Vanderlande Industries is a supplier of integrated logistic solutions for automation of your warehouse / distribution centre

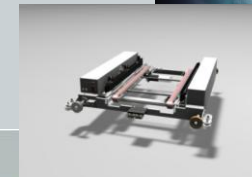
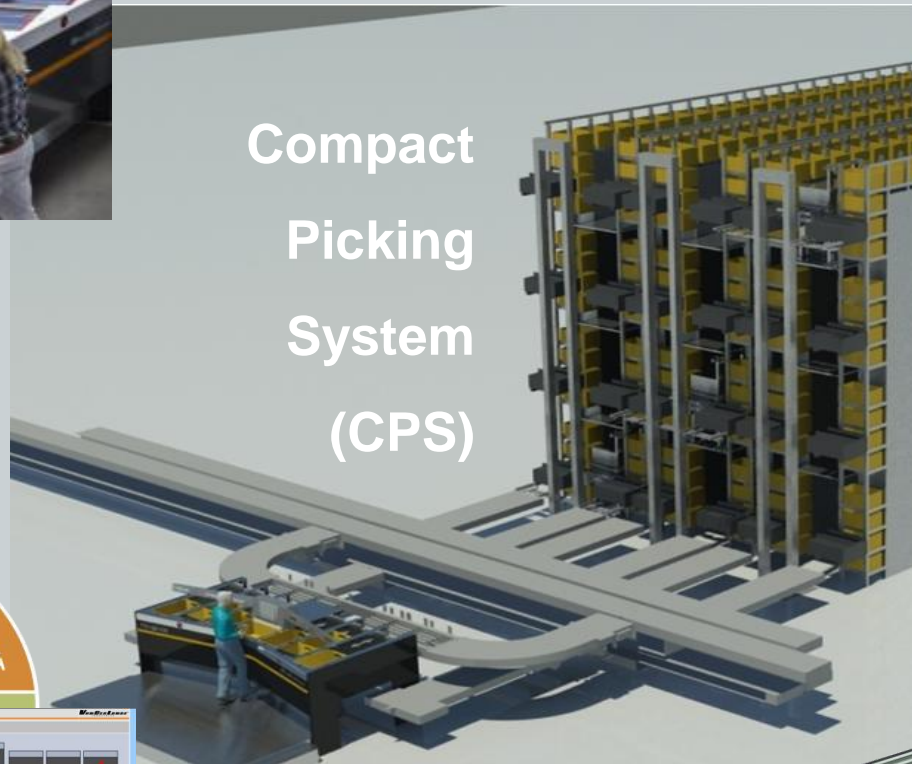


Warehouse Automation – Compact Picken&Packen

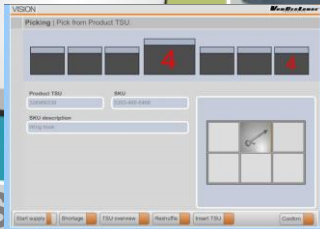


Workstations

Compact
Picking
System
(CPS)



AS/RS



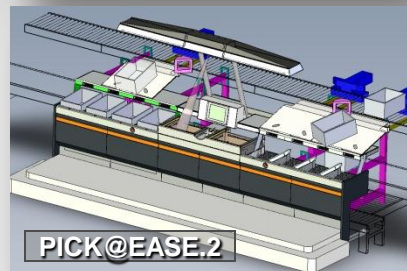
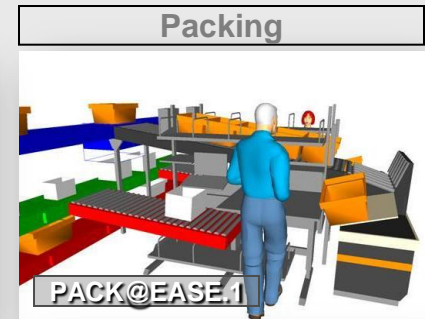
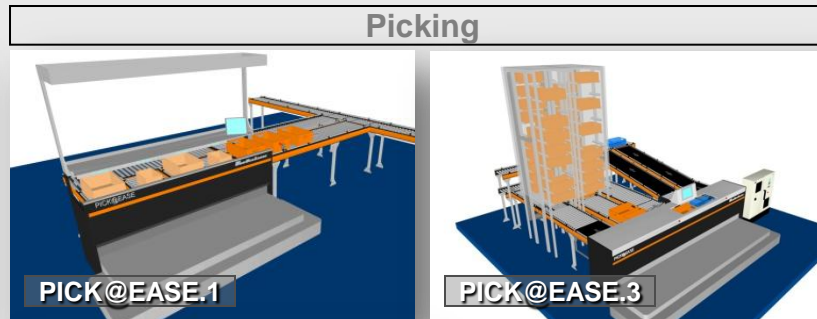
WCS



Conveyor Systems

Workstation - Portfolio

Primary Functions



Secondary Functions (Added Value)

- Parts Counting
- Labelling
- Packing
 - Own identity
 - Cost per line ↓
- Register Weight
- Quality Check
- Track & Trace
- Add Documents / Specials



Workstation - Onninen



Automated item picking – the future?



**THE FUTURE IN
ORDER PICKING...**



**INNOVATIVE AND EFFICIENT SOLUTIONS IN
AUTOMATED MATERIAL HANDLING SYSTEMS**

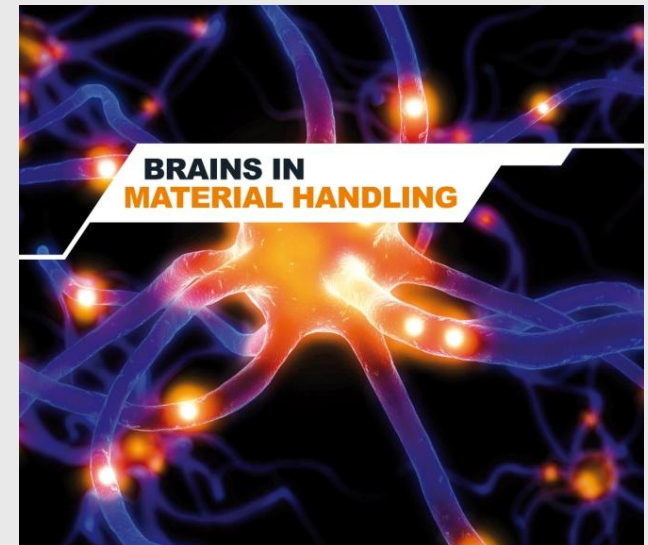
We have broad experience in designing and implementing reliable and ergonomic order picking systems.
Find out what we can do for you at:

www.vanderlande.com



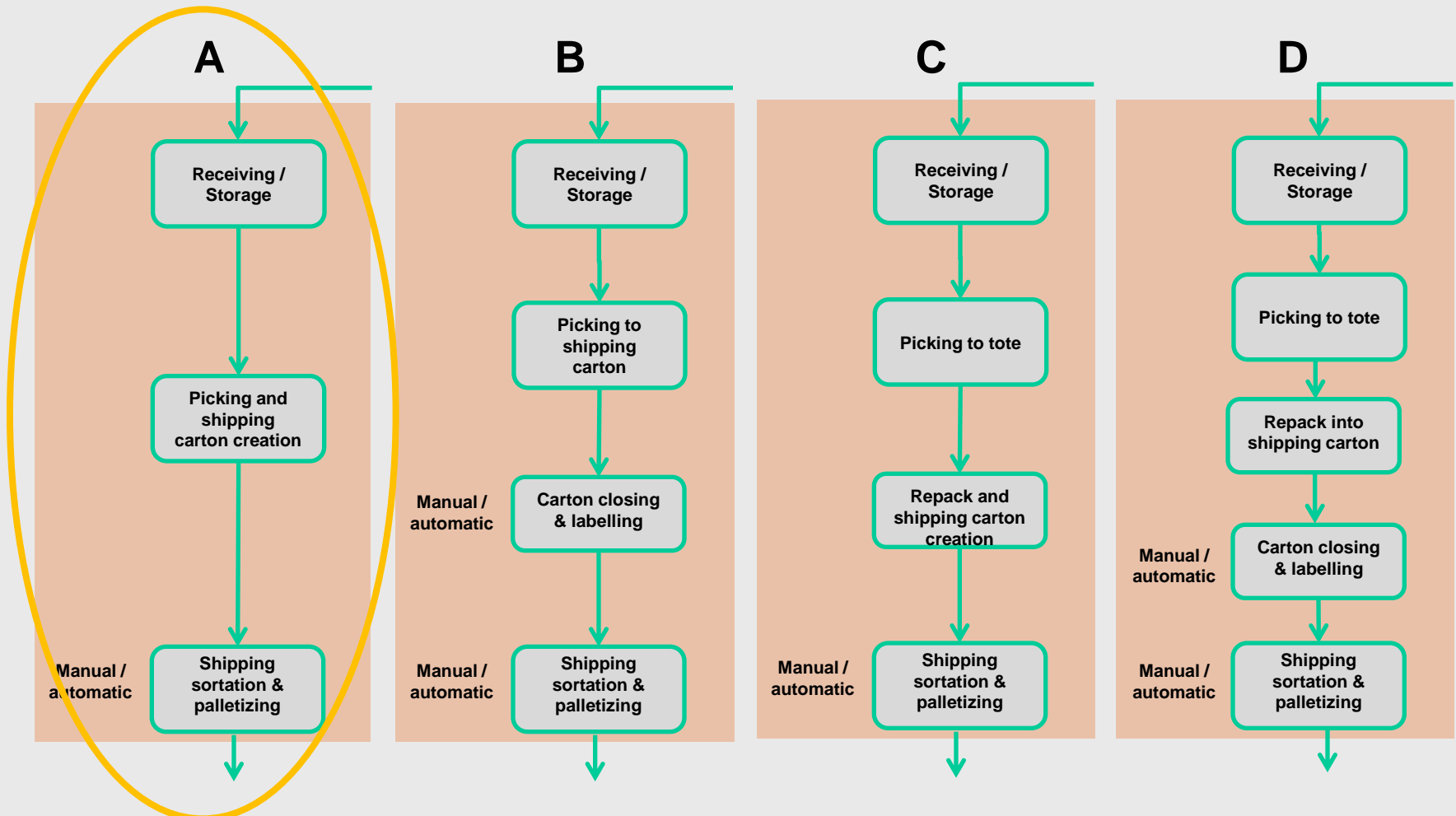
Contents

- Introduction
- Warehouse automation
- **Best Practices**
 - Pick & Pack proces
 - Ahsell, Norway
 - Onninen, Finland
 - Sacchi, Italy
- Summary



PICKING & PACKING

A. One-step pick-pack process



PICKING&PACKING - AHLSELL

A. One-step pick-pack process

- Multiple pick-to locations with manual processing of order carton
- Pick-From location with automatic processing of product tote
- **Integrated VAS + packing activities: e.g. labelling, product weighing, carton setup, ...**
- Ergo-pack: auto-adjustable platform, lighting, ergomat

PICK@EASE.1



Up-to 200 lines per hour



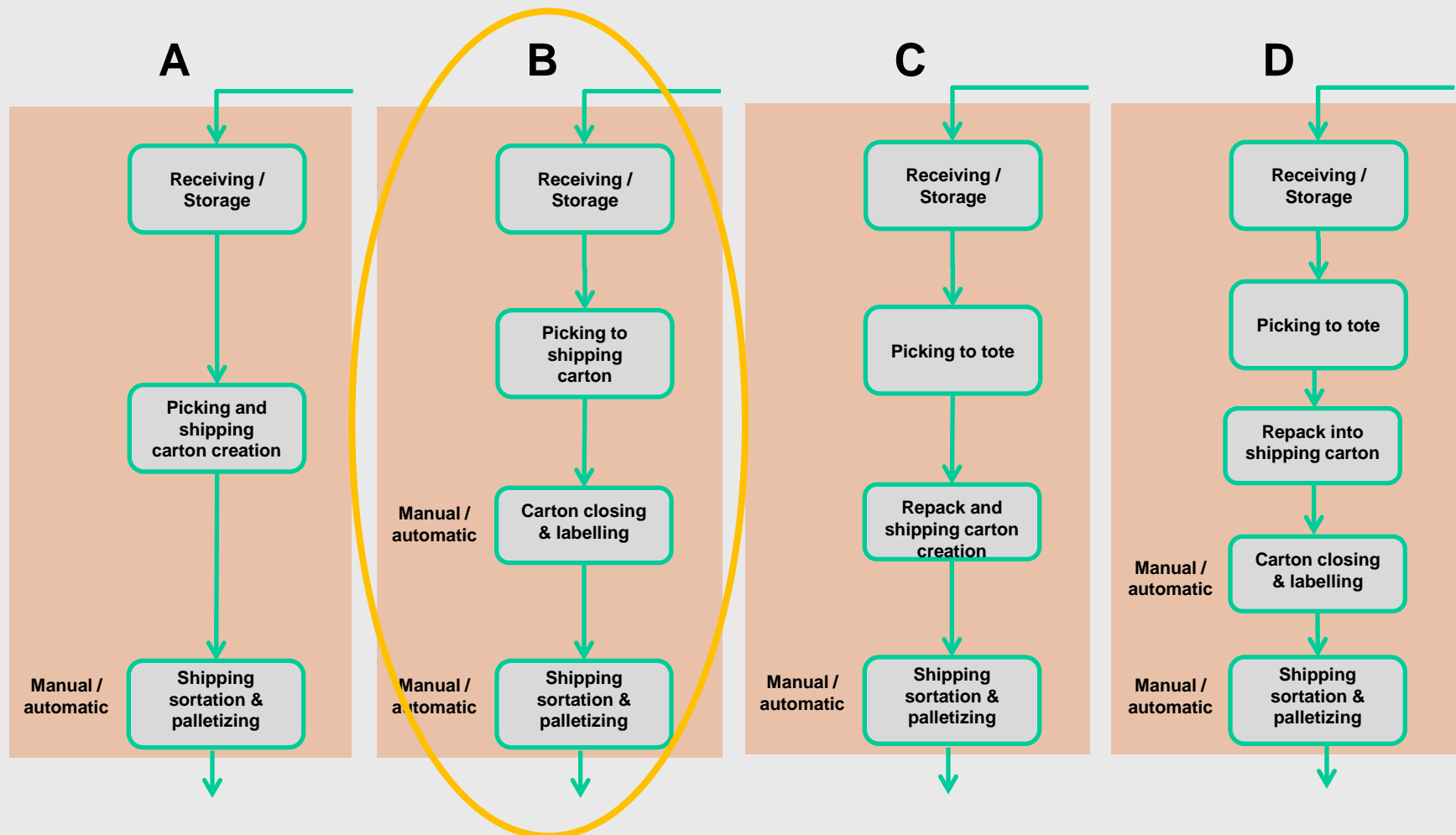
Orderpicking in shipping cartons



Manual closing & labelling of shipping carton

PICKING & PACKING

B. Separated pick-pack process



PICKING & PACKING- ONNINEN

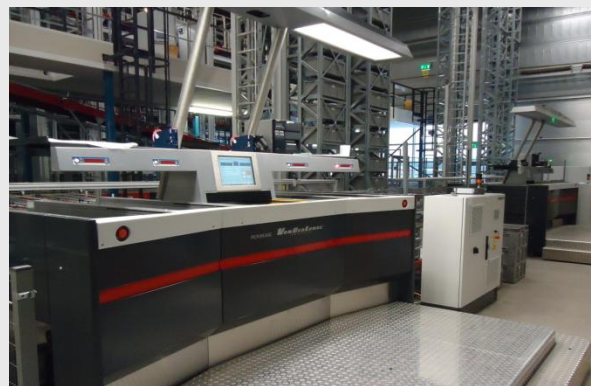
B. Seperated pick-pack process

- Pick-To locations with automatic processing of order **carton or tote**
- Pick-From location with automatic processing of product tote
- **Limited integrated VAS activities**: e.g. labelling, product weighing, track & trace, ...
- Ergo-pack: **auto-adjustable platform**, lighting, ergomat

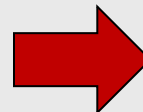
PICK@EASE.4



Up-to 900 lines per hour



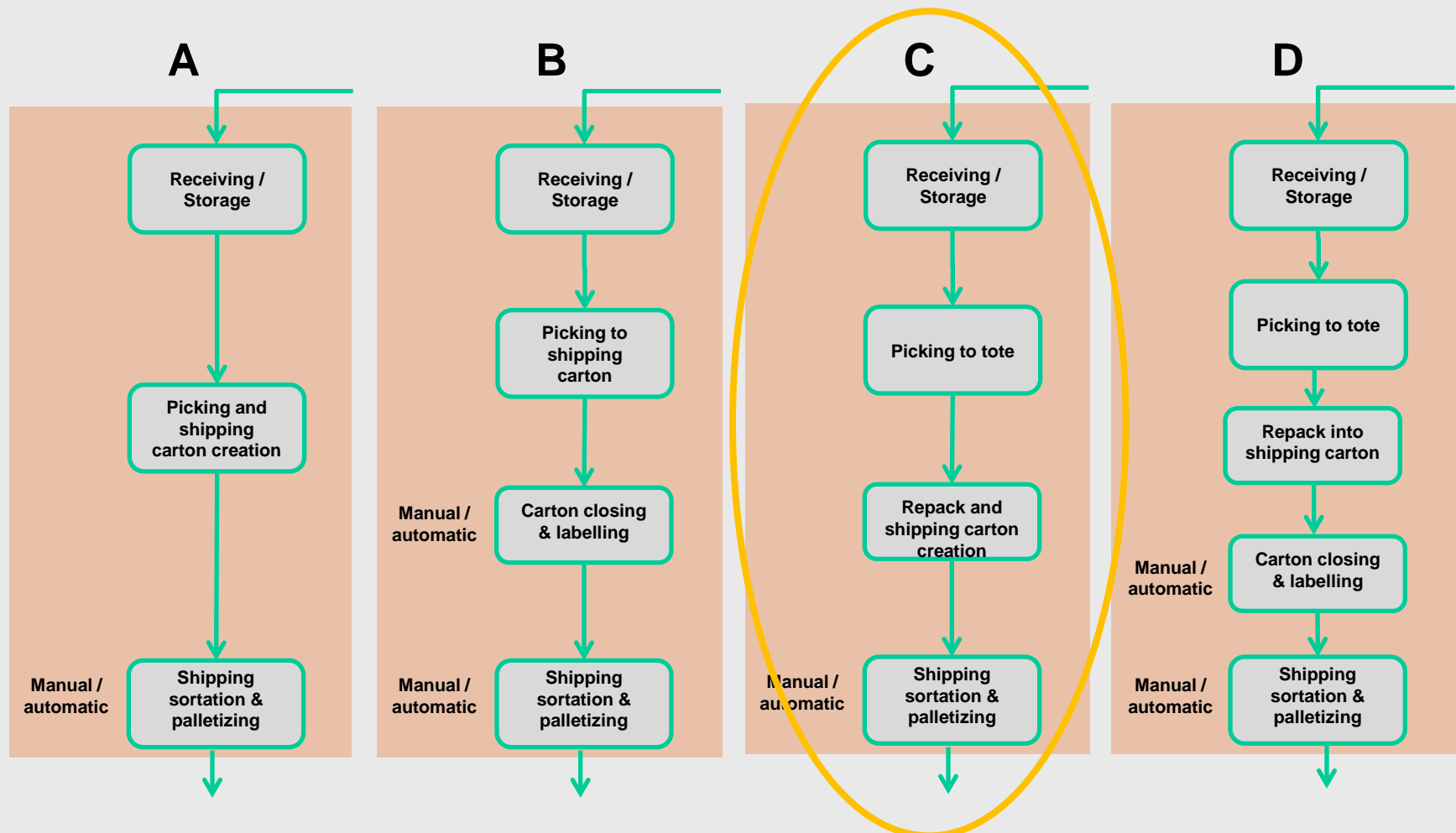
Orderpicking in shipping cartons



Manual closing of shipping cartons

PICKING & PACKING

C. Separated pick and re-pack process

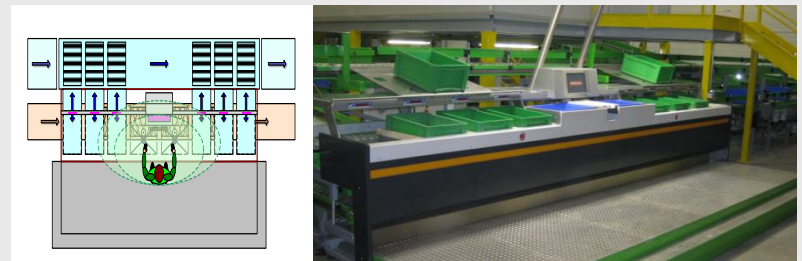


PICKING & PACKING - SACCHI

C. Seperated pick and re-pack process

- Pick-To locations with semi-automatic processing of **order tote**
- Pick-From location with automatic processing of product tote
- Integrated weight check
- Integrated VAS activities: e.g. labelling, product weighing, track & trace, ...
- Ergo-pack: auto-adjustable platform, lighting, ergomat

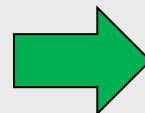
PICK@EASE.2



Up-to 600 lines per hour



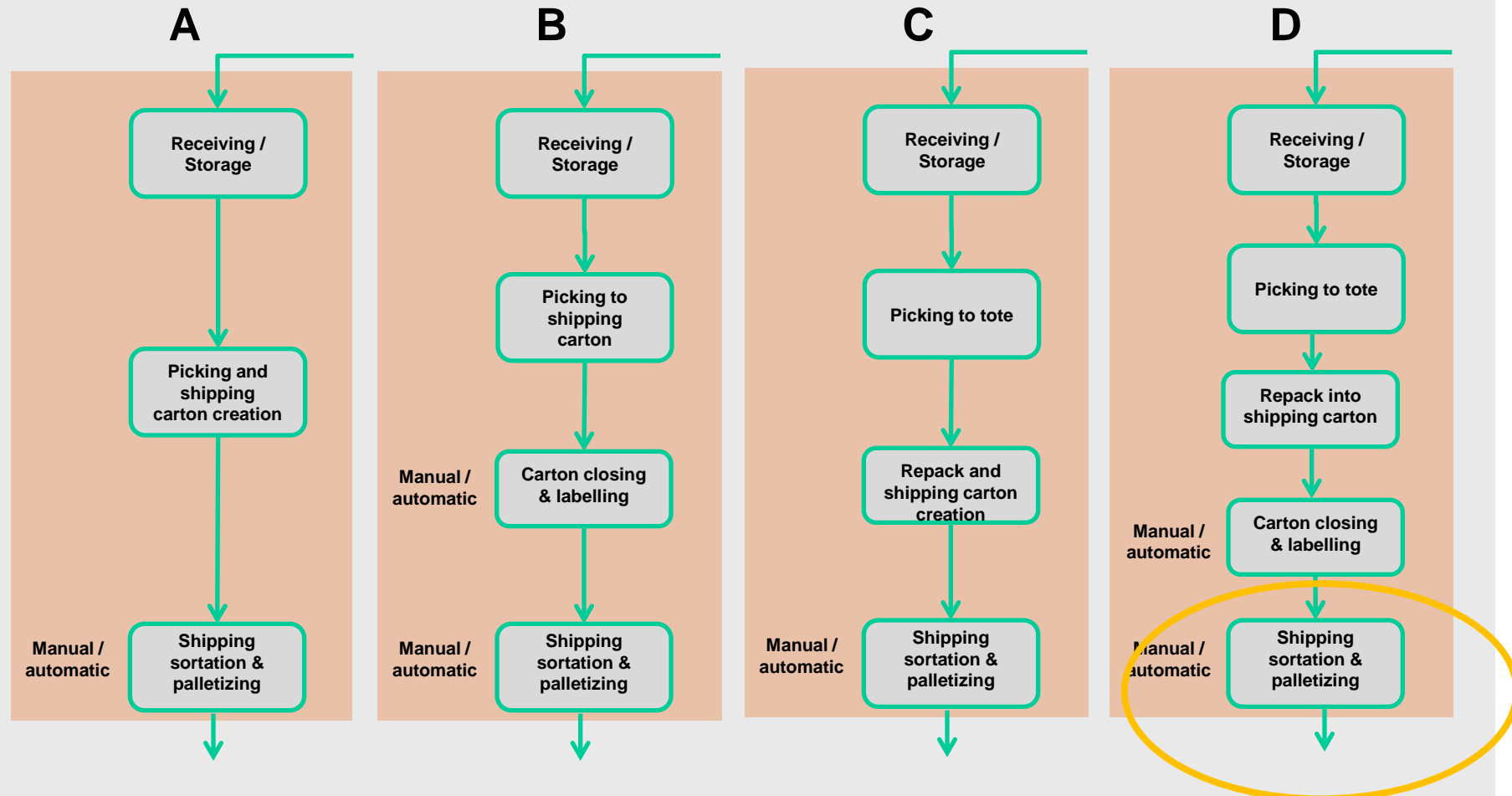
Orderpicking in totes



Packing into shipping cartons

PICKING & SHIPPING

D. Shipping; manual / automated sorting and palletizing



SHIPPING SORTATION & PALLETIZING

➤ Sortation & manual palletizing



➤ Automated palletizing

Up-to 600 lines per hour

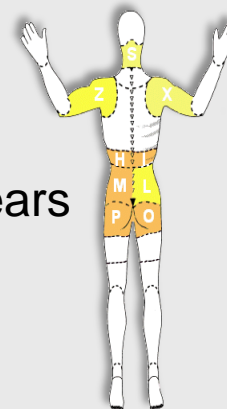


SUMMARY

- One workstations “requires” multiple functionalities
 - Technical Wholesale
 - Counting
 - Packing
 - Labeling
 - Retail and e-fulfillment
 - Customized Packing
 - Own identity
 - Leaflets
 - Labeling
 - Weight check

- Man and Machine are complementary

- Work@ease product portfolio is extended last 3 years
 - Receiving, picking, packing
 - Improved Ergonomics
 - Sustainable Performance
 - Operator supporting options



Questions ?



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