

Efficiency meets Accuracy

Innovation for Today's Supply Chain

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zero defect warehouse

Accuracy
Efficiency

products & solutions

Current/Tomorrow
Efficiency
Goods in
Picking
Quality Check/Audit
Service

conclusion



Efficiency meets Accuracy

OPERATIONAL CHALLENGES

What is your company's business model?

OPERATIONAL CHALLENGES

What are your challenges related to Efficiency?

OPERATIONAL CHALLENGES

How do you monitor and measure Accuracy?



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ZERO DEFECT WAREHOUSE

Fact #1: A logistic process needs to be accurate!

■ Accuracy

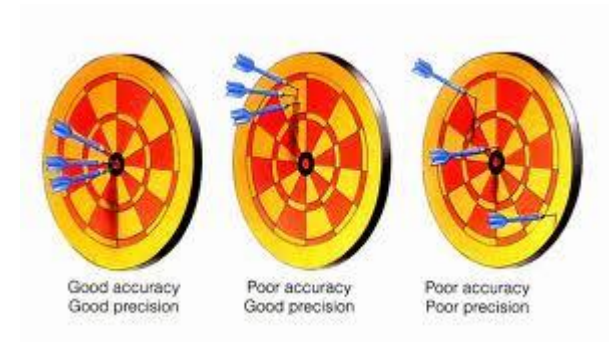
- Reducing the error rate in the logistic material flow
- Keep error rate on a low level

ac·cu·ra·cy

/ˈækjərəsē/ 

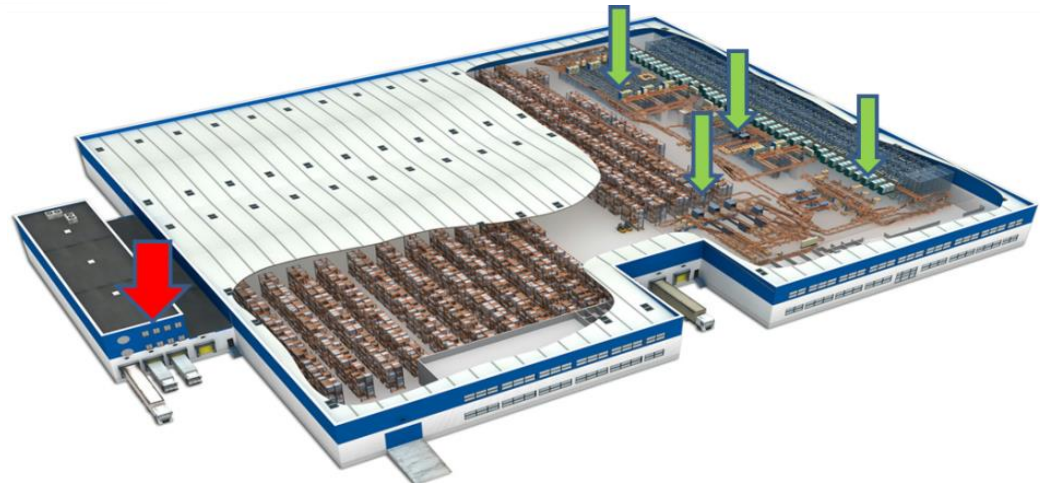
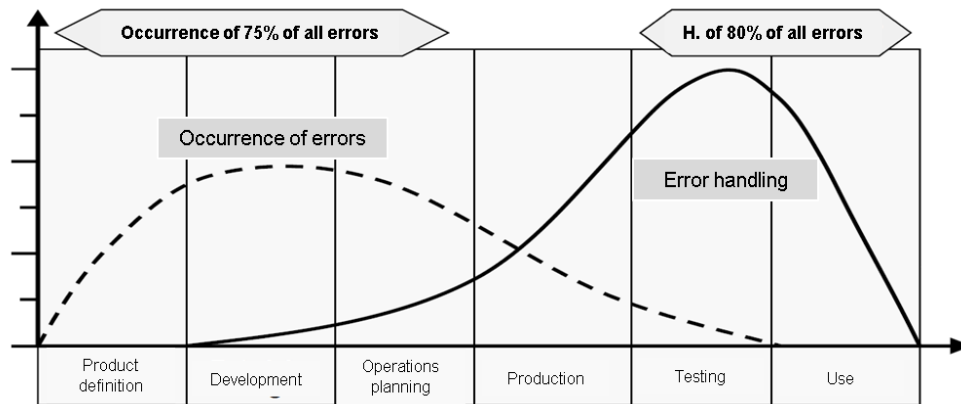
noun

1. the quality or state of being correct or precise.
"we have confidence in the accuracy of the statistics"
synonyms: correctness, [precision](#), preciseness, [exactness](#), exactitude; [More](#)



ZERO DEFECT WAREHOUSE

Fact #2: The later an error is detected, the more expensive it is to solve it!



ZERO DEFECT WAREHOUSE

Fact #3: A logistic process needs to be efficient!



Should a logistic process also be effective?

VS

■ Effectiveness

- Doing the right things
- Focused on the target
- Long term thinking

■ Efficiency

- Doing things right
- Focused on the process
- Restricted to the present state



ZERO DEFECT WAREHOUSE

Fact #4: Tension between efficiency and accuracy

Quality

Performance

Target level

Current level





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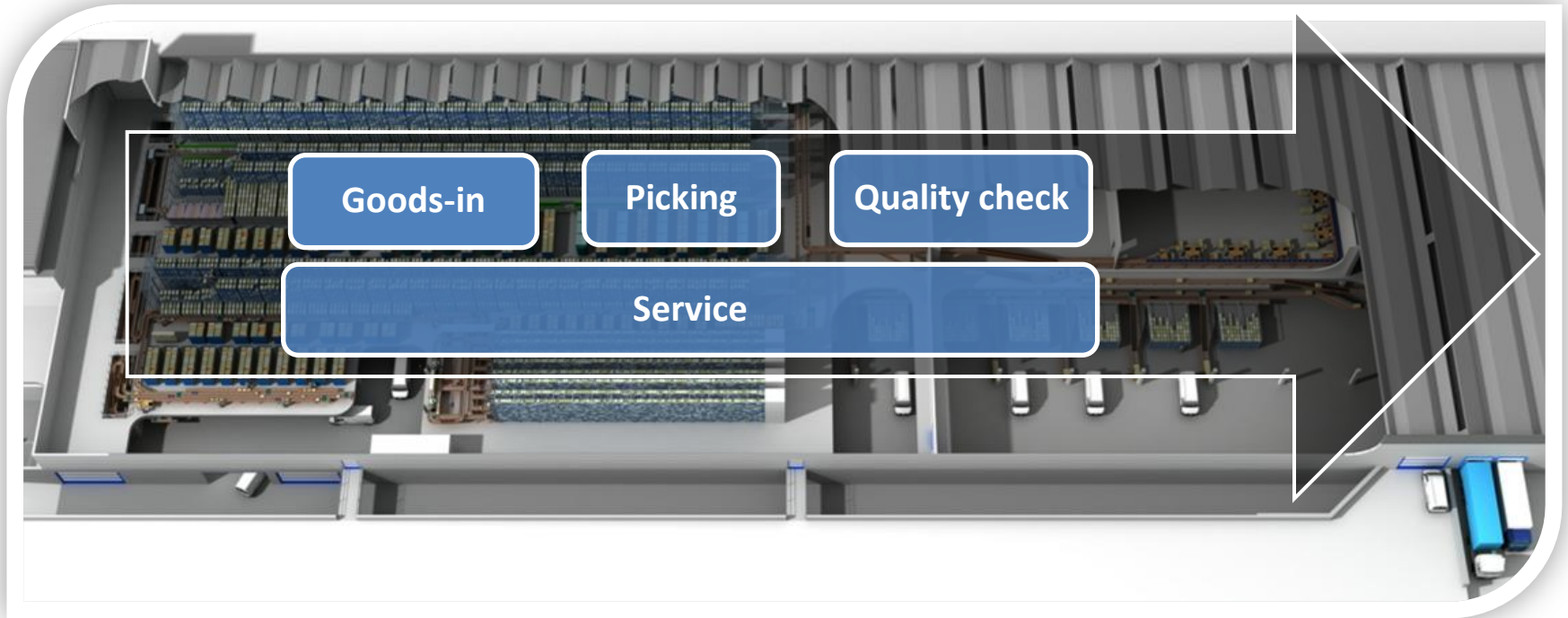
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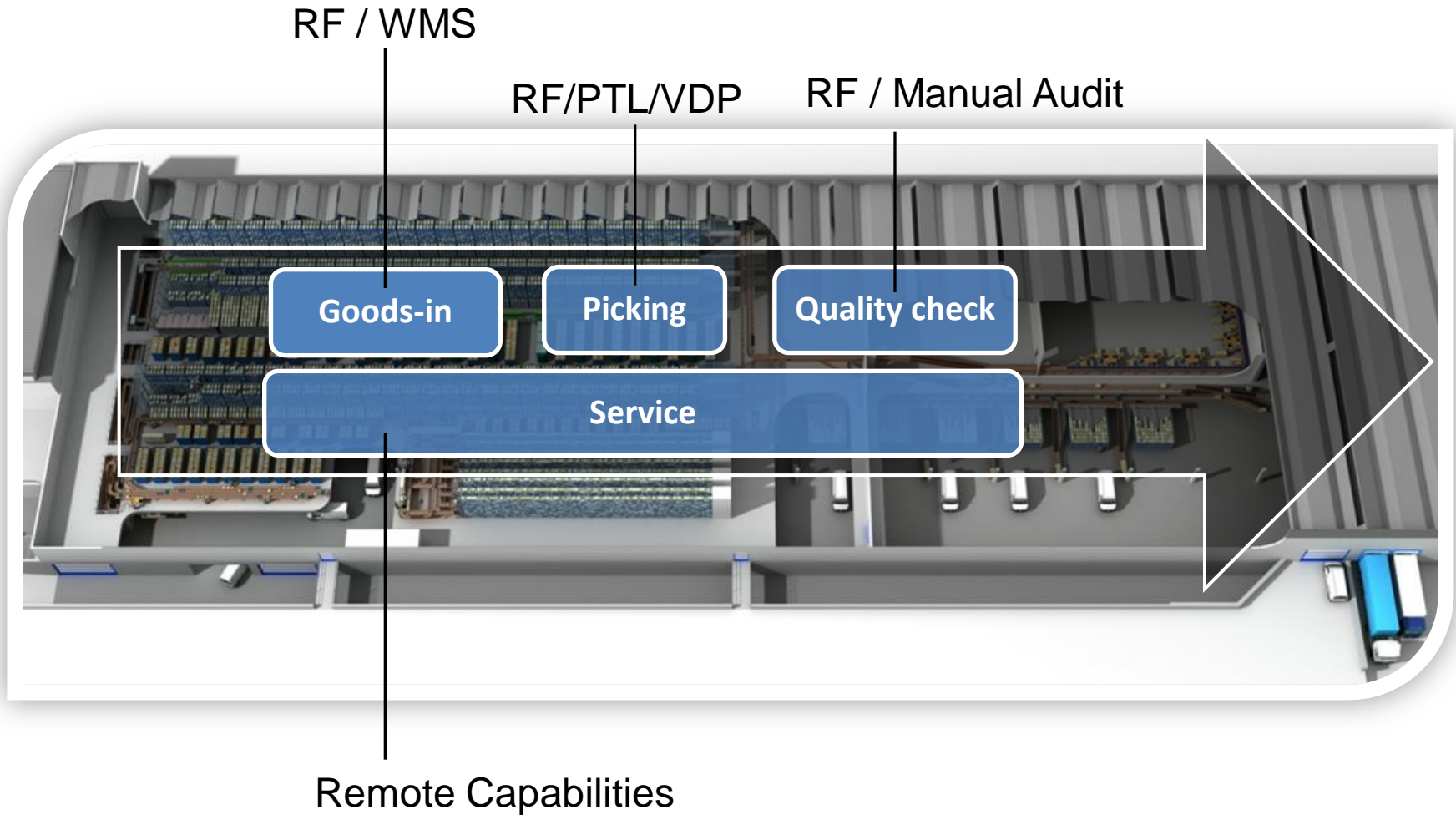


Efficiency meets Accuracy

WAREHOUSE PROCESSES



CURRENT CHALLENGES | TECHNOLOGY USED



EFFICIENCY

RF



VDP



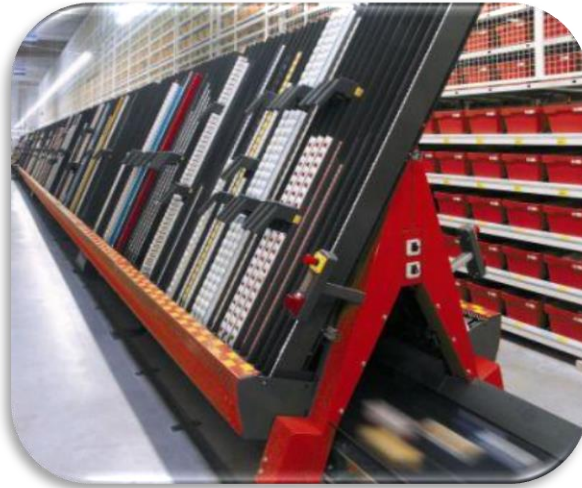
PTL



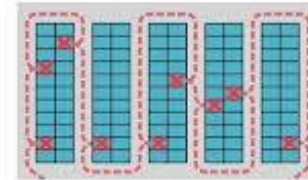
EFFICIENCY

Modern Picking Technologies

■ A-Frame



Travel Distance



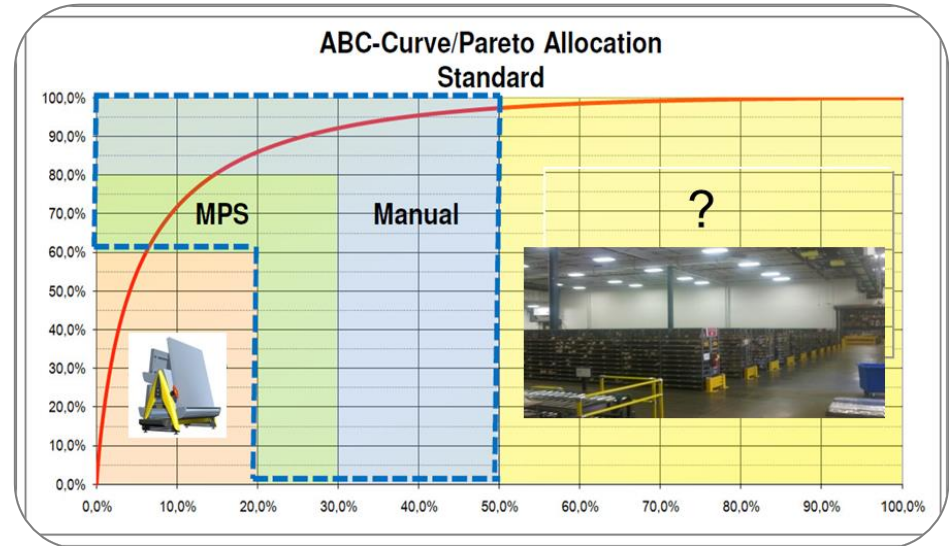
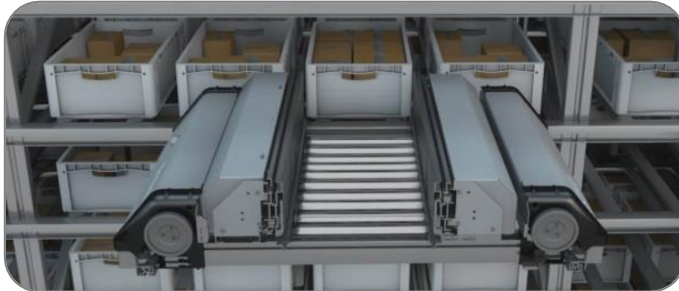
Remember: Traveling is
60%-70% of labor costs

EFFICIENCY

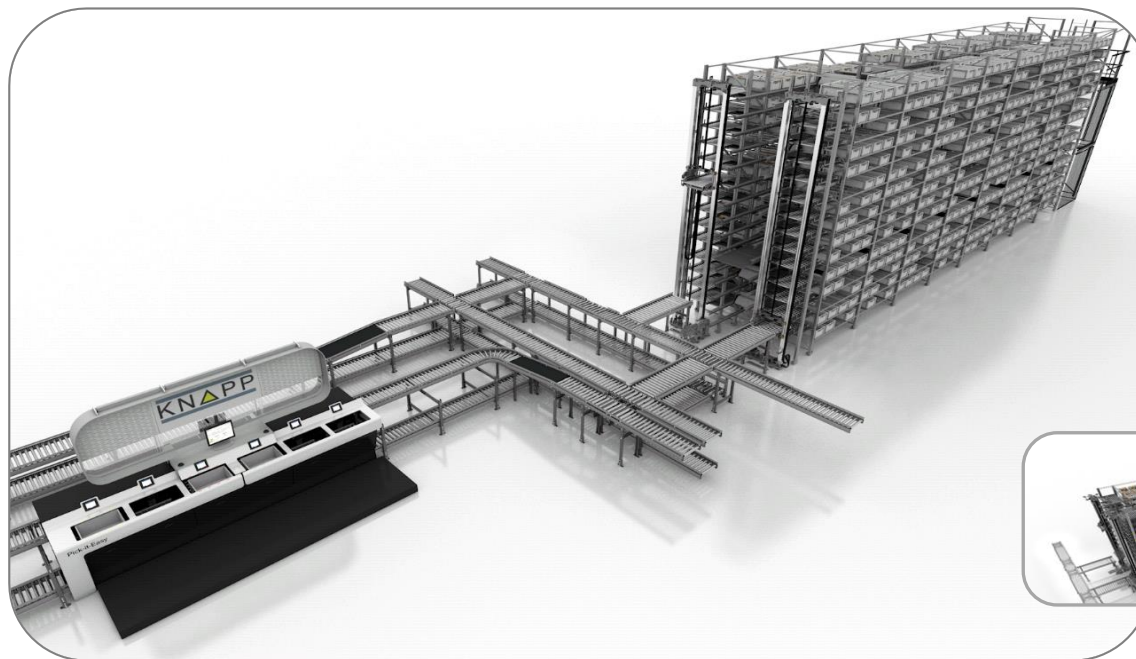
Modern Picking Technologies

■ Goods to Person

■ Shuttles



GTP | SHUTTLES



ACCURACY & EFFICIENCY?

Quality

Performance

Target level

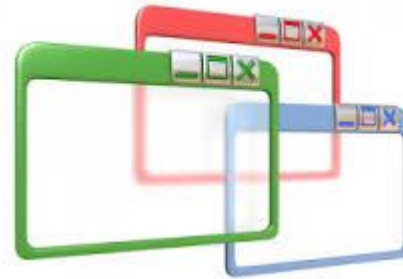
Current level



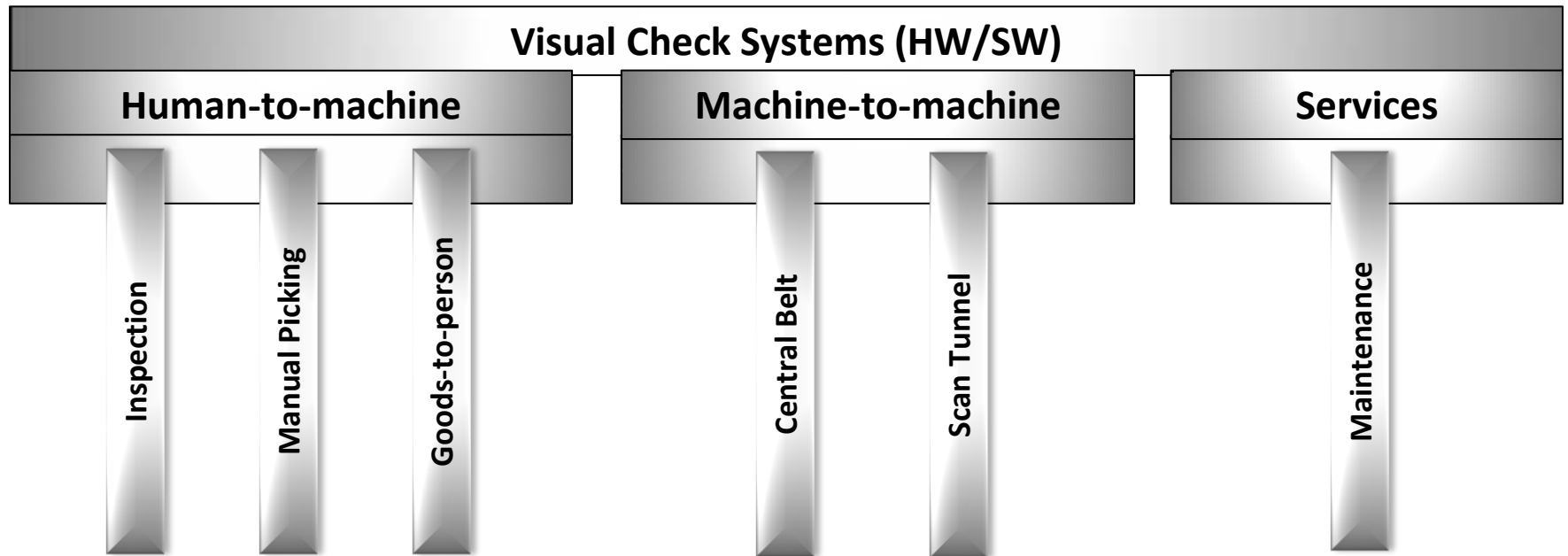
NEW (CURRENT) TECHNOLOGY | VISION



Software



VISION SOLUTIONS OVERVIEW



MANUAL PICKING

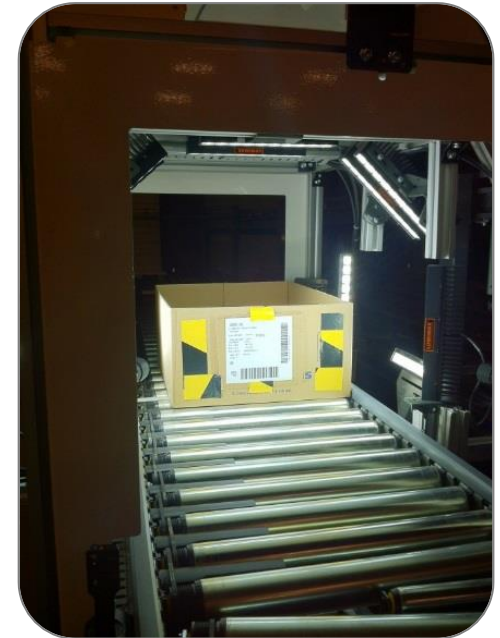
- Error-free picking
- Minimum learning time
- Optimized warehouse navigation
- Lot and serial number tracking possible without additional actions
- Compatible in every warehouse



SCAN TUNNEL



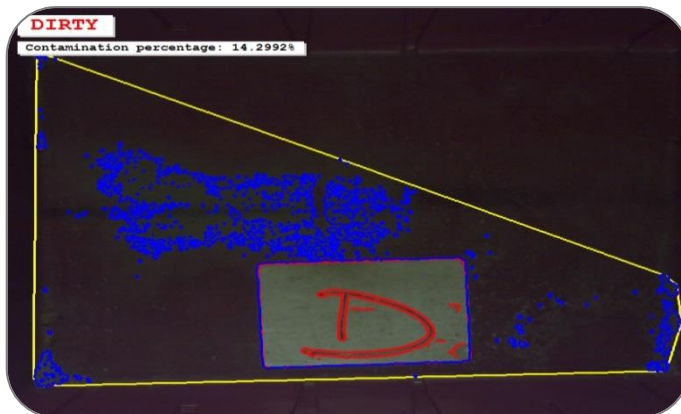
- Tote check during article storage at goods-in
- Reads barcodes, Datamatrix codes or routing labels applied on cartons or totes
- Detects dirt in totes
- Detects barcodes on any side of tote
- Supports different tote or carton sizes



TOTE INSPECTOR

■ Dirt detection

- Dirty totes are detected and diverted to a cleaning station
- The level of dirt detected can be set to meet the customer's needs
- A dirt level of up to 0.01% for the entire scanned surface can be identified



GOODS TO PERSON



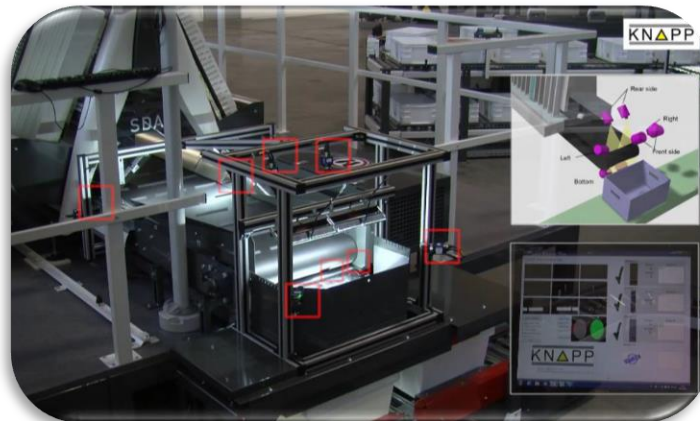
- 100% check during pick procedure at work station
 - Check at infeed conveyor
 - Check at outfeed conveyor
 - Lot and serial number tracking possible without additional user interaction
- Compatible in every warehouse



CENTRAL BELT



- 100% check at transfer point into target tote
- Minimal impact on article throughput
- Identification and tracking of articles
- Reduces error rate in picking process
- Also applicable to pick-to-belt applications



AGGREGATION STATIONS



Picking

- Allows mixed orders to be picked simultaneously
- Automated article scanning captures lot and serial number
- Identifies items for each order; missing items; “overpicks”; incorrect items

Quality Control

- Work stations for order quality check
- Current manual process can be partly automated
- Better quality and performance of the work process



MAINTENANCE SERVICES



- Audio-visual support for on-site or remote service during the troubleshooting process
- Enables person-to-person communication
- Audio-visual bi-directional remote support
- E-training and “on the job” training





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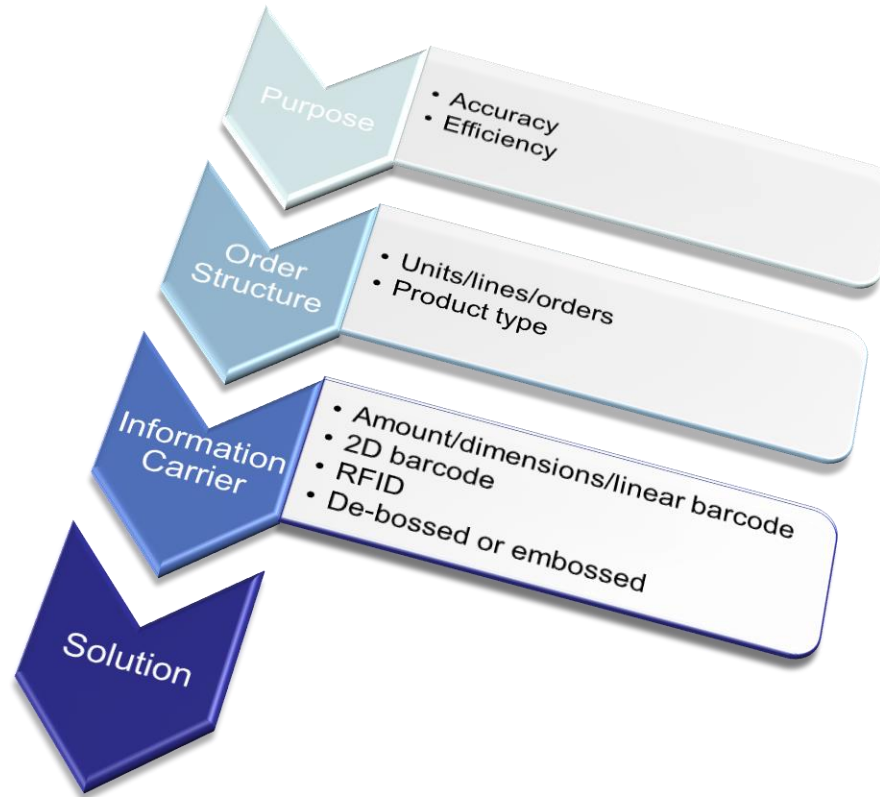
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DECISION → SOLUTION



CONCLUSION

- Determine company specific requirements and potential value vs. cost to implement
 - Do you want to solve business issues?
 - Or gain a competitive advantage?
 - Do all warehouse areas require monitoring?
 - Can the solution be easily implemented in existing warehouses?
- A wide variety of functionality exists today – even some “out of the box”
- Capability to track chain of custody (if required)
- One size ***doesn't*** fit all
- Consider scalability and flexibility for future changes
- Get started now!

Any questions



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