



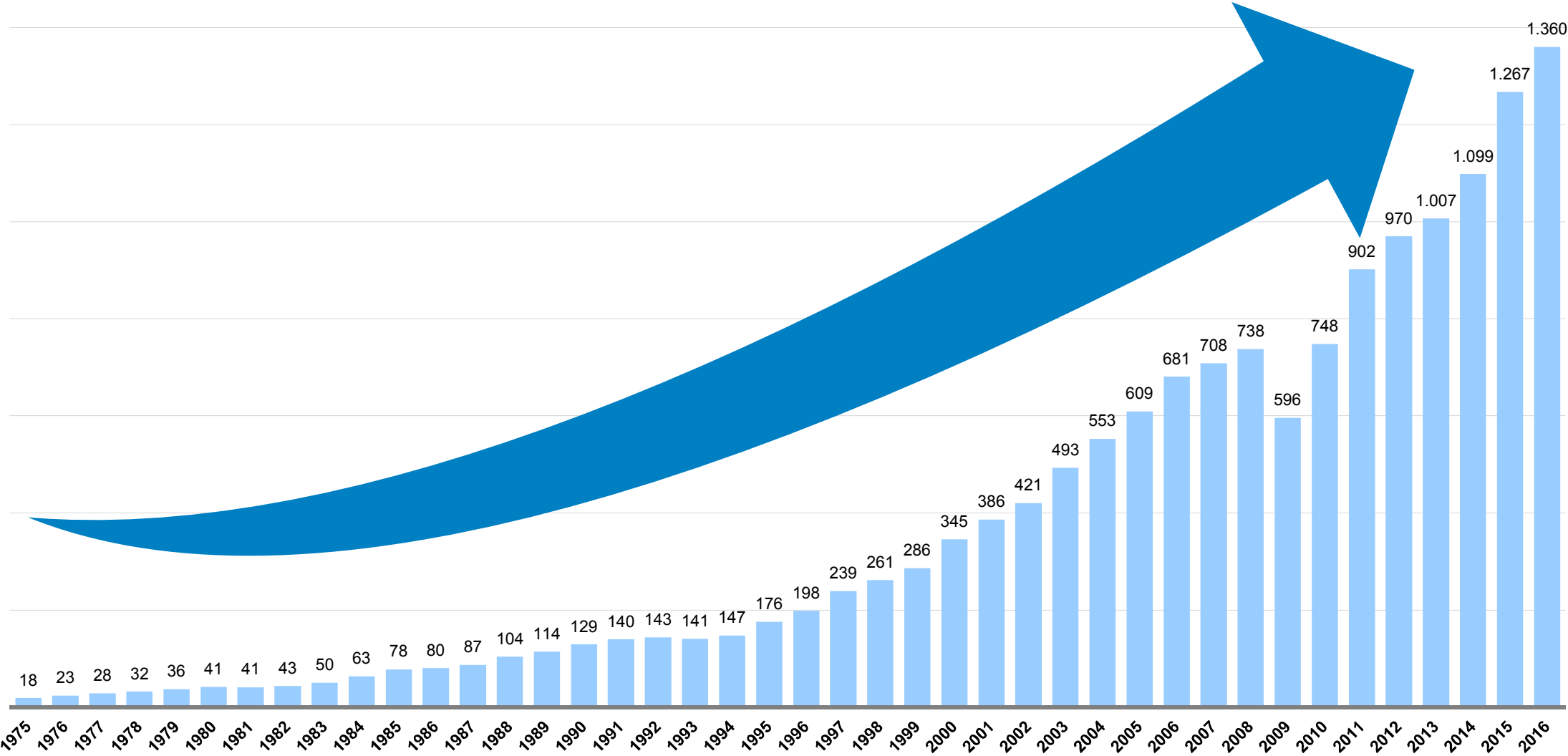
# LE TECNOLOGIE 4.0 DI SICK PER LA LOGISTICA INTEGRATA



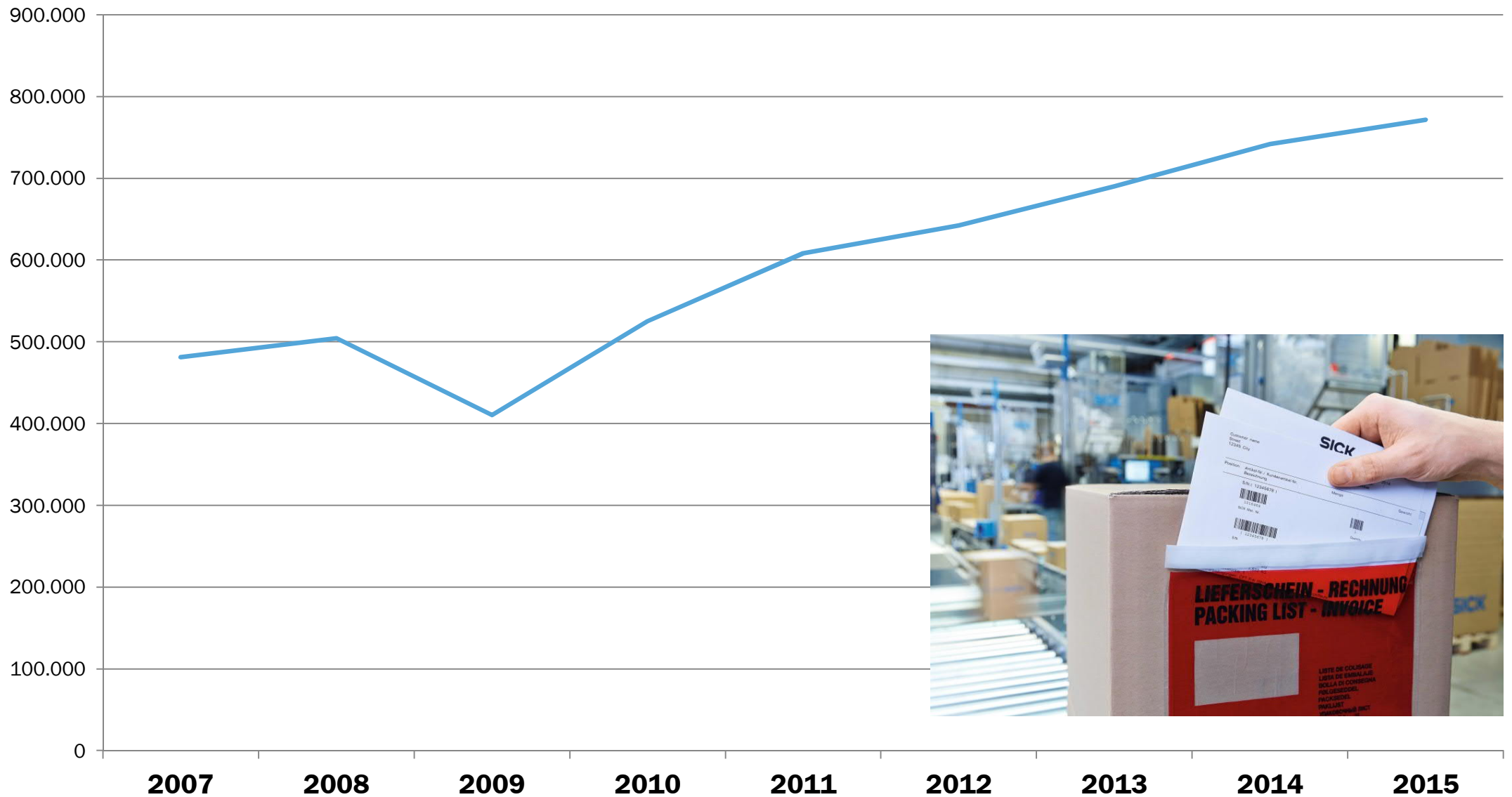
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Costantino Ghigliotti  
Sales Manager Factory Automation  
Villalta di Gazzo (PD), 21 Settembre 2017

# THE SICK GROUP HISTORY



## Parcels



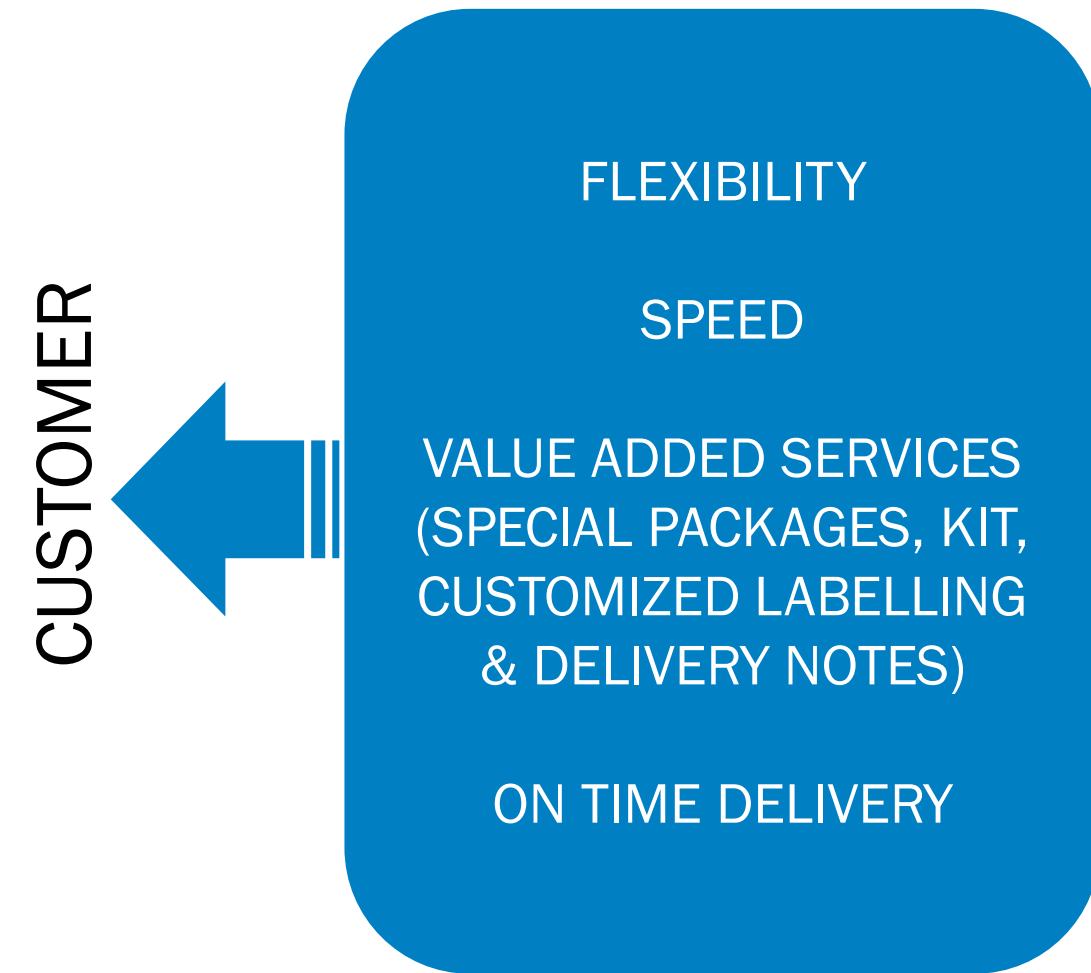


**Globalization**  
Harmonization  
of all processes

**Digitalization**  
Production and  
Business Processes

**Cultural Change**  
Collaboration,  
Transparency and  
Trust

**amazon.com**  
The Amazon Prime logo, featuring a yellow curved arrow pointing from the 'a' to the 'm' in 'amazon', and the word 'Prime' in a blue, italicized sans-serif font.



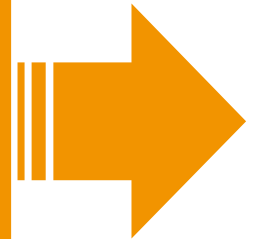
MORE THEN 40.000  
ITEMS

BULKY GOODS

DELIVERIES PEAKS

EXPRESS SHIPMENT

TRACEABILITY

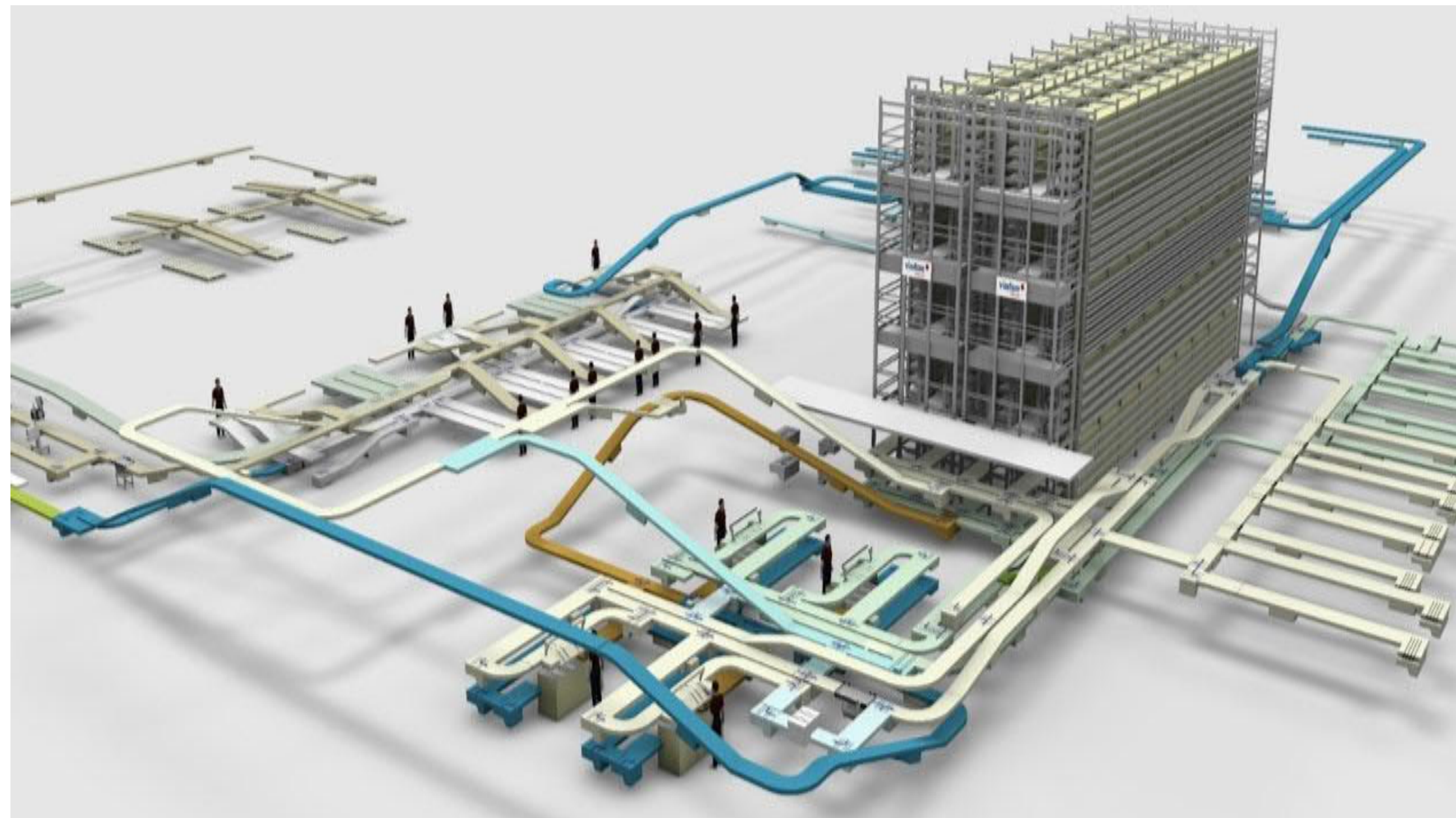


**SICK**  
Sensor Intelligence.

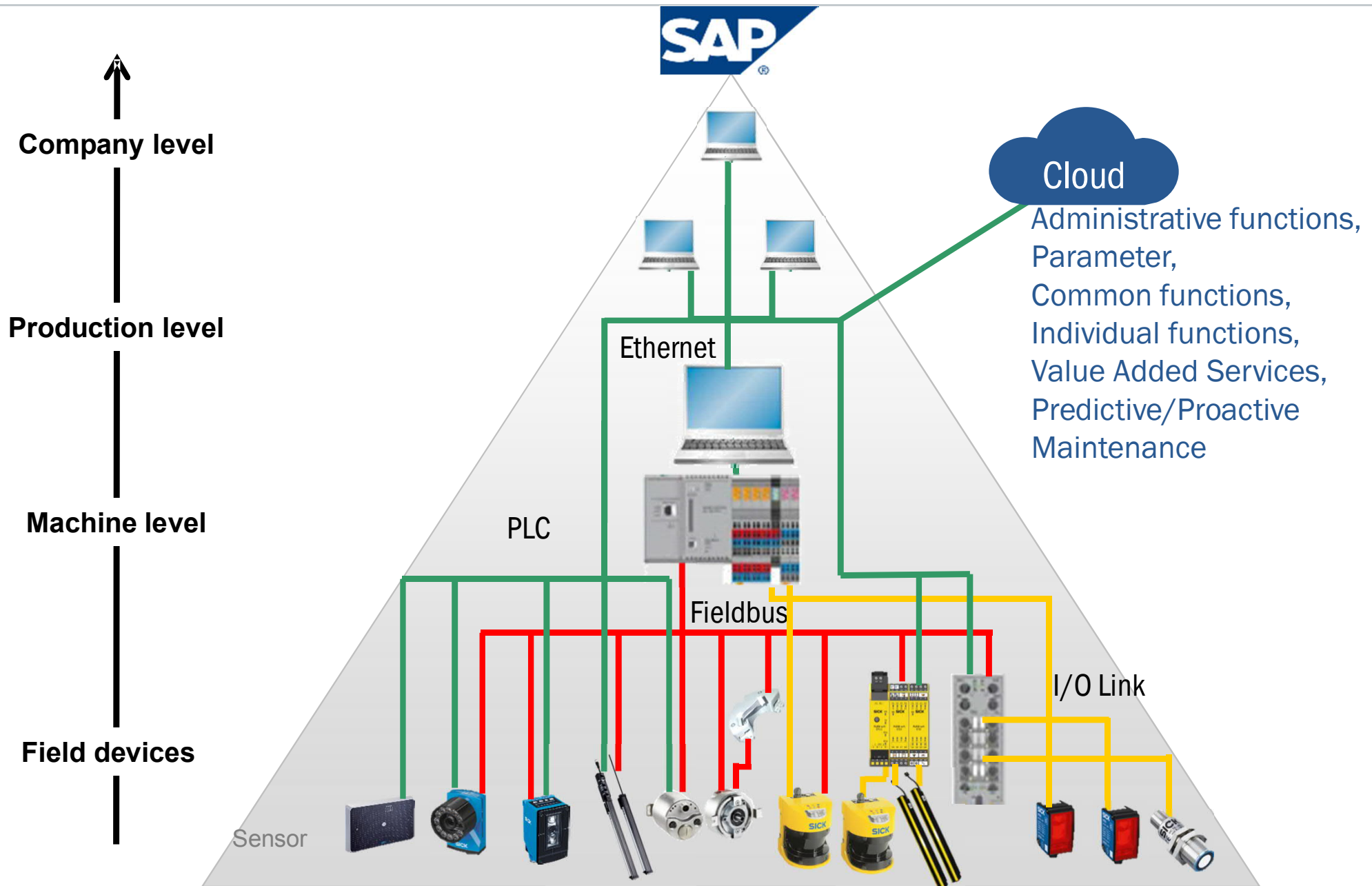




# SICK DISTRIBUTION CENTER





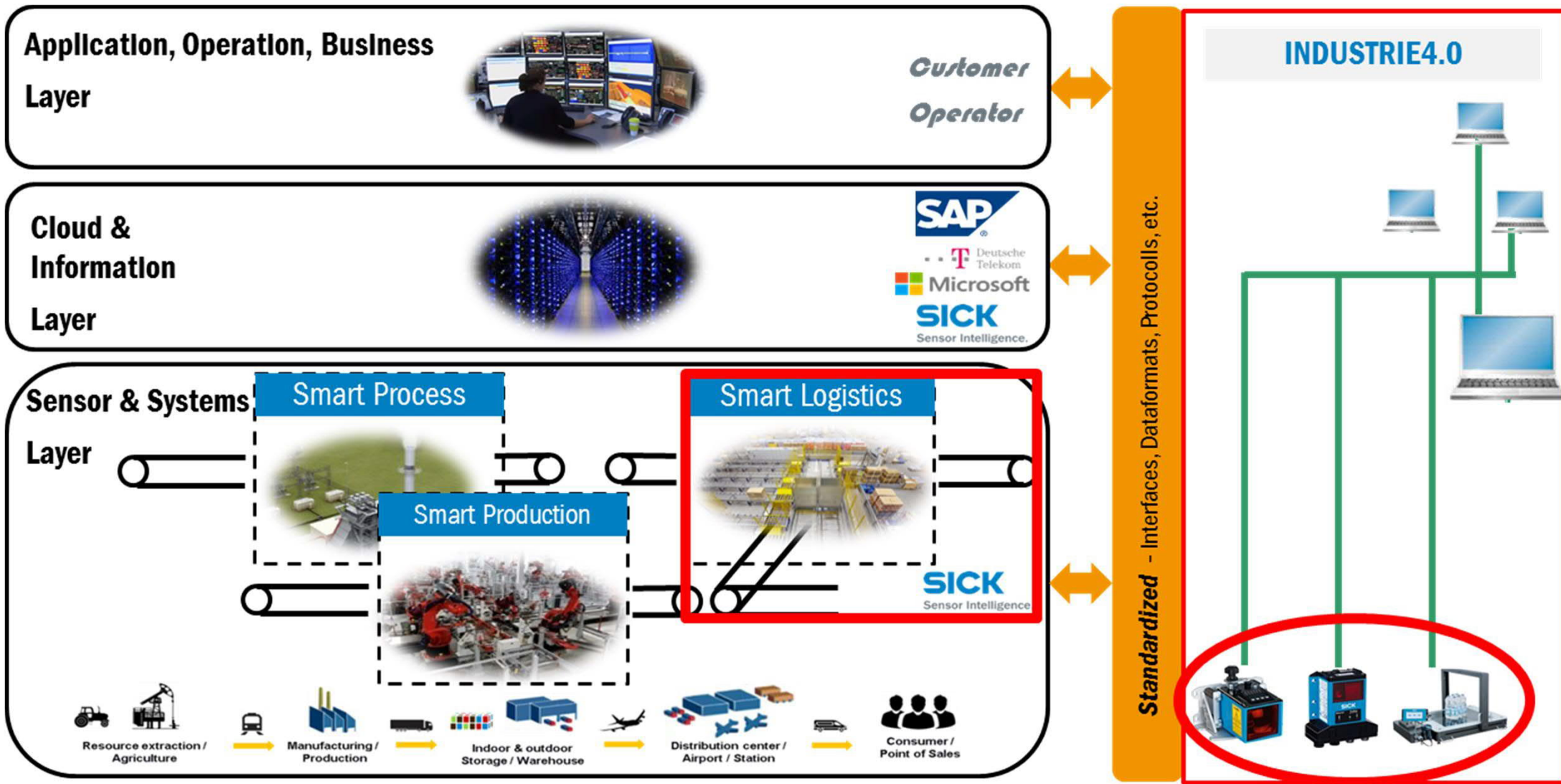






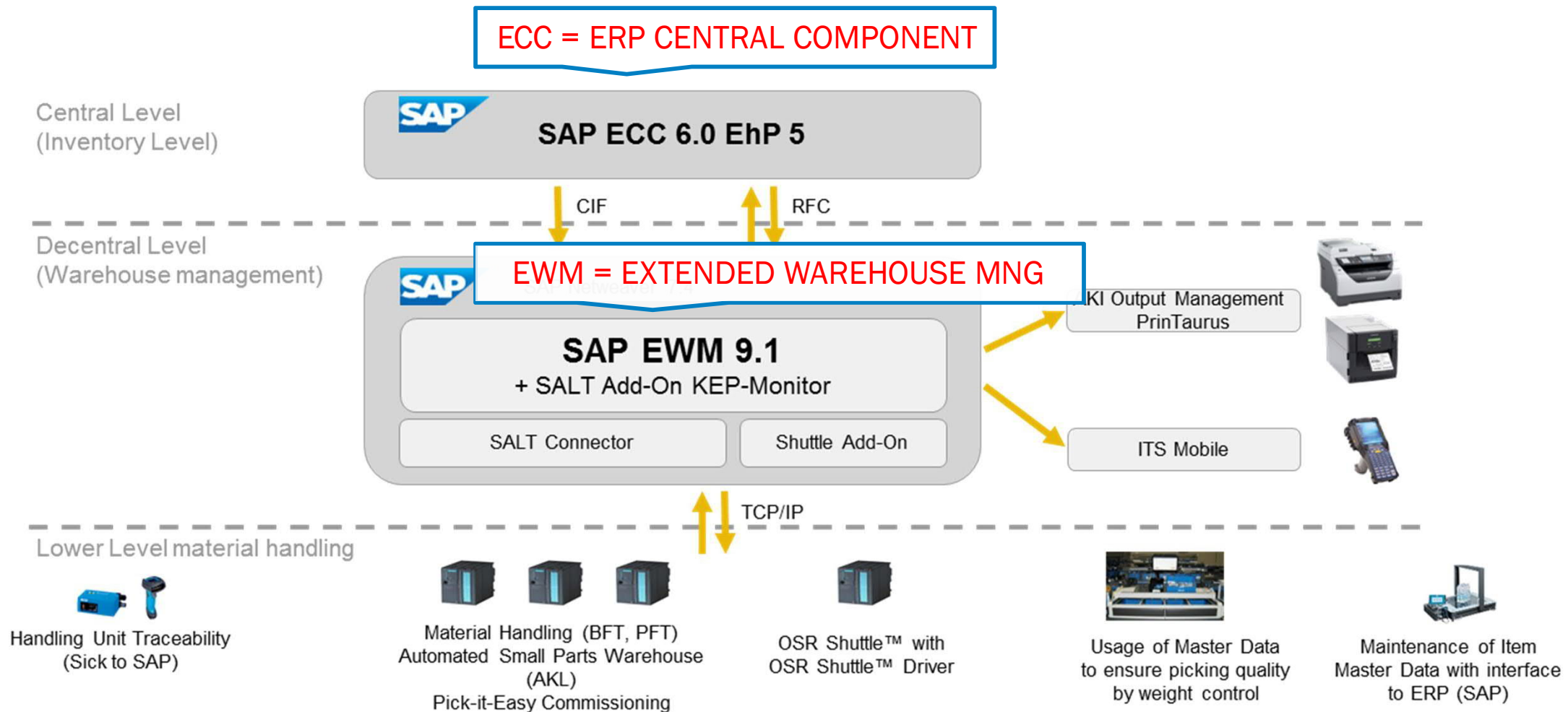
# INDUSTRY 4.0 – LAYER MODEL

## LAYER MODEL FROM SENSOR TO APPLICATION

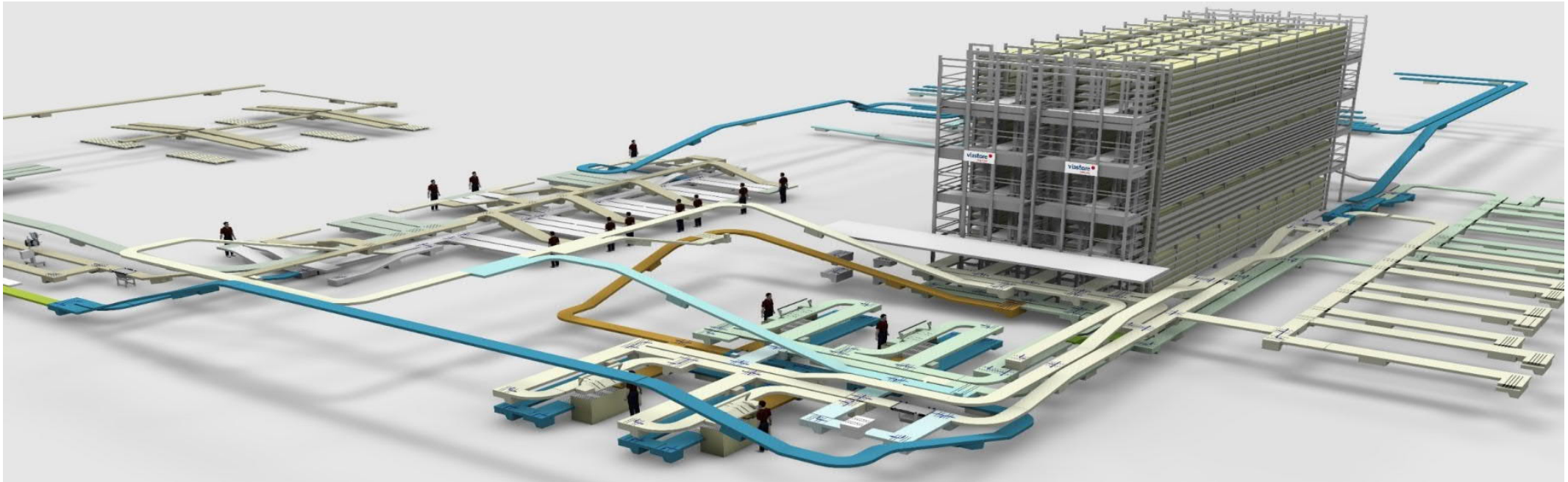


# SYSTEM ARCHITECTURE

## SICK DISTRIBUTION CENTER



# MANAGEMENT OF COMPLEX MATERIAL FLOW BY SAP EWM-MFS



- Intelligent implementation of shipments
- Real time control and coordination of the complete material flow
- Management by SAP EWM-MFS (Extended Warehouse Management – Material Flow System)

## Intelligent Implementation of shipments

### ■ Shipment priority: Dynamic prioritization of shipment lines

- ▶ Shipment Loading Date
- ▶ Shipment Loading Time
- ▶ Delivery Type
- ▶ Shipment Terms
- ▶ Additional Requirements based on process

Typ	Meldungstext
<input checked="" type="checkbox"/>	Datum: 11.08.2016    Uhrzeit: 12:38:20
<input checked="" type="checkbox"/>	Verarbeitung ZWEWM_OUTB_PRIO_PPF wird gestartet
<input checked="" type="checkbox"/>	Lieferung 312456 Position 10 wird bearbeitet
<input checked="" type="checkbox"/>	Lieferung 312456 Position 10 ist bereits einer Welle zugeordnet
<input checked="" type="checkbox"/>	Start der Lieferprioritätenermittlung
<input checked="" type="checkbox"/>	Pos. 10 / Belegbezug: 45 von 45 Bewertungspunkte
<input checked="" type="checkbox"/>	Pos. 10 / Zeitbezug: 30 von 40 Bewertungspunkte
<input checked="" type="checkbox"/>	Pos. 10 / Prozessbezug: 0 von 20 Bewertungspunkte
<input checked="" type="checkbox"/>	Pos. 10 / Prio ( 50 ) = Max. Bewertung ( 105 ) - Bewertung( 75 ) + 20
<input checked="" type="checkbox"/>	Ende der der Lieferprioritätenermittlung
<input checked="" type="checkbox"/>	Lieferpriorität 050 zur Lieferung 312456 ermittelt

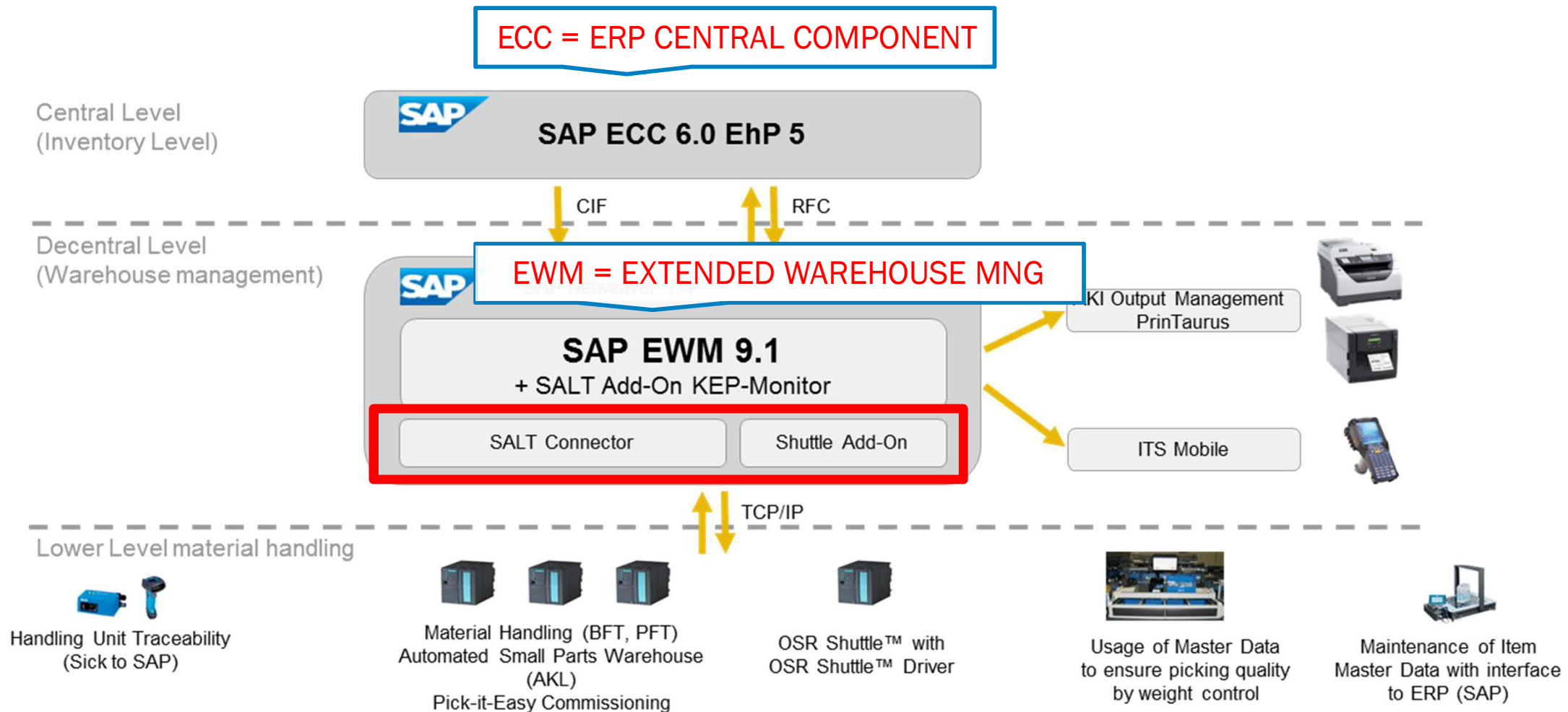
### ■ Cyclical control and adjustment of the shipping priority

### ■ Automatic wave management



# SYSTEM ARCHITECTURE

## SICK DISTRIBUTION CENTER



## **SALT-Scheduler: Software to manage and coordinate complex material flow**

- Load oriented orchestrated small parts warehouse / Shuttle / Picking and Packing Management
  - ▶ Creation and approval of storage tasks / Queue-Assignment
  - ▶ Proof of capacity of the system and implementation of transport orders
  - ▶ Compliance and merge of different shipment combinations from other storage areas including manual processes
  - ▶ Planning and execution of replenishment process
- Creation of continuous running material flow



## Lean and efficient shipment processes by SALT Add-On KEP monitor



- Integration of SALT Add-Ons KEP-Monitor in SAP EWM
  - ▶ Connection of all logistic service providers and shipping agents in SAP
  - ▶ „Inline“ label printing in high dynamic material flow process on container conveyor system
  - ▶ Daily closing by Data transmission and manifest
  - ▶ Complete transparency in SAP ERP (shipment) by replication of handling unit Data (e.g. Tracking number)
- Increase of efficiency and performance in the shipping area by usage of the KEP monitor.

### 4.770 SICK products ensure a smooth process:

- Bar code readers CLV650, Lector 654
- Handheld scanners IDM261 Bluetooth
- 3D Smart Camera Trispector
- Master Data Analyzer
- Pick to light curtains
- Safety light curtains mac4, minitwin2
- Measuring automation light grids MLG
- Incremental encoders DBS60 Core
- Miniature photoelectric sensors W4-3 G6
- Inductive proximity sensors IME18, IM18, IQ10
- Multitask photoelectric sensors PowerProx
- Safety locking devices i110 Lock
- Small photoelectric sensors W12L-2 Laser, W9-3
- Linear measurement sensors OLM100 Hi



- Electro-mechanical safety switches i16S, i110R
- Small photoelectric sensors W14-2, W18-3
- Inductive safety switches IN3000 Direct
- Absolute encoders A3M60 Profibus, AFS/AFM60 SSI
- Mid range distance sensors DT35
- Inductive proximity sensors IME12
- Multiple light beam safety devices M4000 Advanced
- Small photoelectric sensors G10, W9L-3
- Ultrasonic sensors UM30
- Optical data transmission system ISD400 (Pro)

## Quality and efficiency in the shipment process by innovative technology.



Pick-it-Easy working places

Multi-Order-Commissioning

Traceability / barcode reading for safety products

Employees are supported by instruments (weighing machines, light curtains and pick to light)



## Analytics Solutions

A suite of industry-tailored software solutions that analyze data and images collected from intelligent sensors.



A close-up, slightly low-angle portrait of an older man with short, light-colored hair and glasses. He is looking down and to the left with a thoughtful expression. He is wearing a dark suit jacket, a white shirt, and a dark tie with a small, light-colored pattern. The background is out of focus, showing a vertical wooden panel on the left and a plain, light-colored wall on the right.

*„We certainly don't need  
more technology.  
What we need is better  
and more proper technology.“*

Dr. Erwin Sick (1909 – 1988),  
Inventor and entrepreneur, 1971

MANY THANKS FOR YOUR ATTENTION.



Costantino Ghigliotti

Cell. 335 / 73.85.713

[costantino.ghigliotti@sick.it](mailto:costantino.ghigliotti@sick.it)