



Smart Factory Logistics

Industry 4.0 | Digital Technology

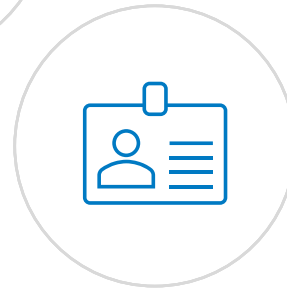
PROVEN PRODUCTIVITY

BOSSARD COMPANY PROFILE

Founded 1831
Publicly listed 1987
SIX Swiss Exchange

Family Business
7th Generation

Geographic Sales Distribution
54% Europe
27% America
19% Asia/Pacific



82 Locations in
32 Countries

16
Quality and testing
laboratories globally

2,900
Employees

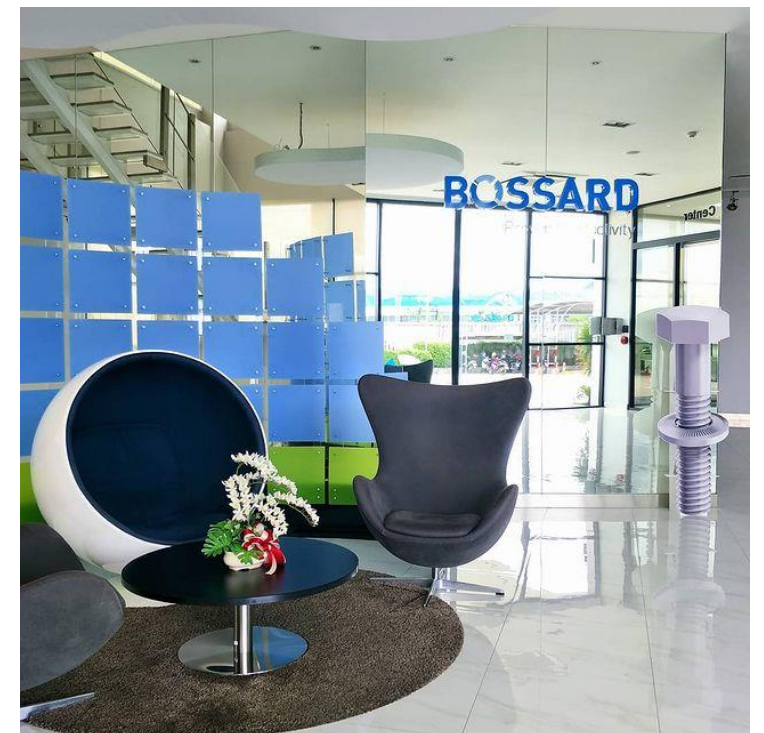
Total Turnover 2022
in CHF million

1,153.8

BOSSARD THAILAND BANGKOK – OFFICE

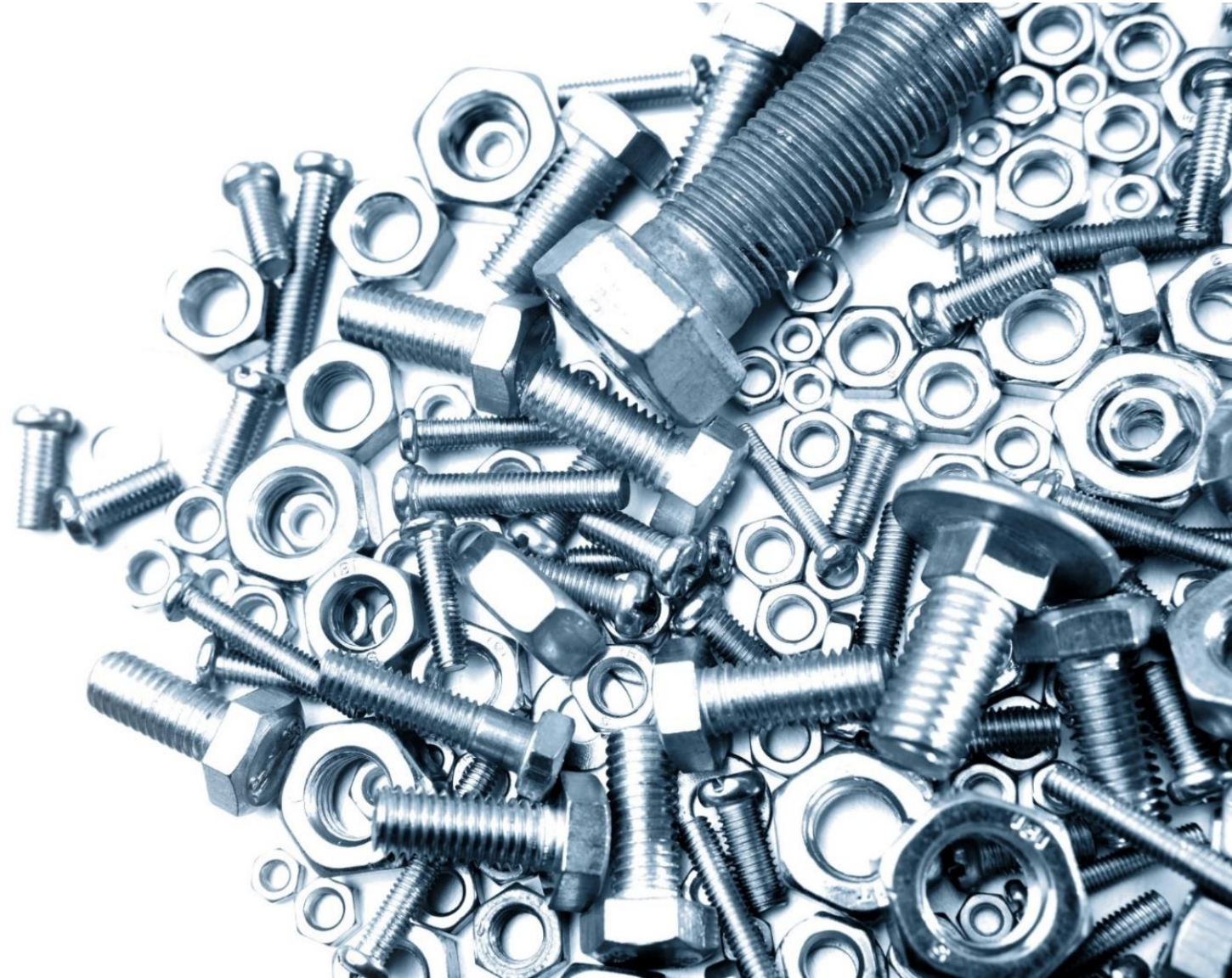


Since October 2000,
established and moving on to
23 years in Thailand



**OVER 185 YEARS IN SWITZERLAND
WE ARE EXPERT FASTENERS AND**

**OVER 30 YEAR
WE ARE PROVIDING
LOGISTICS SOLUTION
TO SUPPLY TO FACTORY**



BOSSARD THAILAND CUSTOMERS



OUR MAIN PRODUCT OFFERINGS



Product Solutions



Assembly Technology Expert (ATE)



Smart Factory Logistics (SFL)



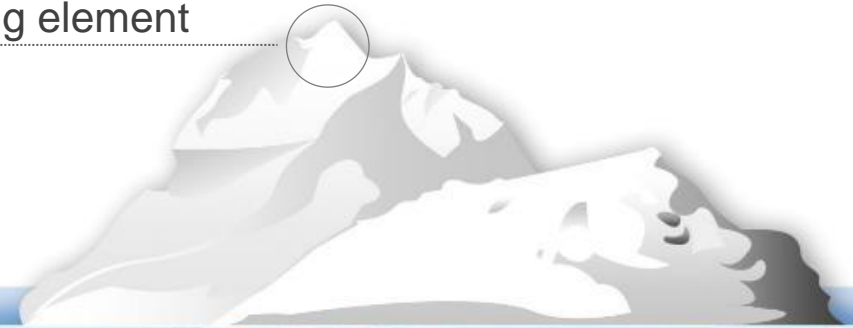
Smart Factory Assembly (SFA)

IT IS ABOUT PRODUCTIVITY

Visible cost
15%

Invisible cost
85%

Costs of fastening element



Design and select



Logistic and handling



Quality inspection



Assembly



Sourcing and Ordering



Stocking

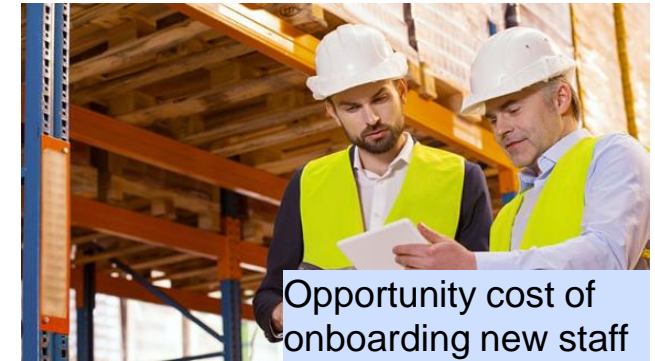


Pre-assembly



What going on today

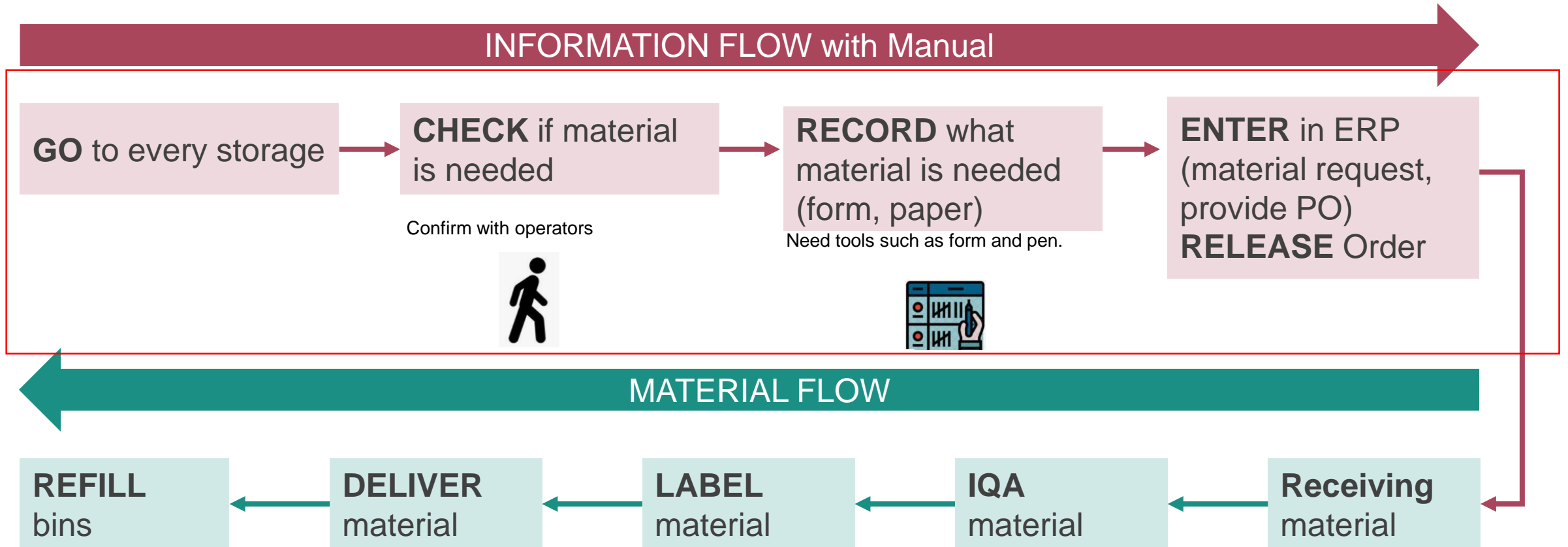
Supply Chain challenges pre-Industry 4.0



SEEM RIGHT ...TO EASY
Sometime



RE-SUPPLY MATERIAL REQUEST CONVENTIONAL FACTORY



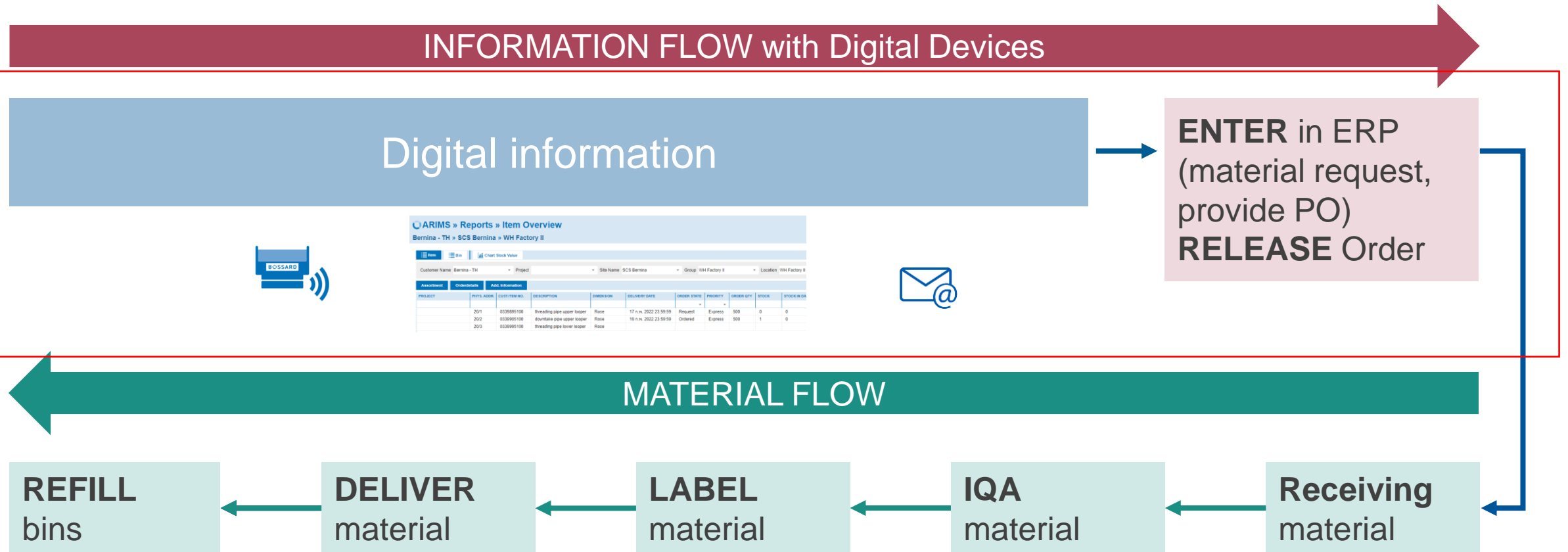
CLASSICAL KANBAN PHILOSOPHY

MANY YEARS UNTIL TODAY WITH 2 BINS CONCEPT



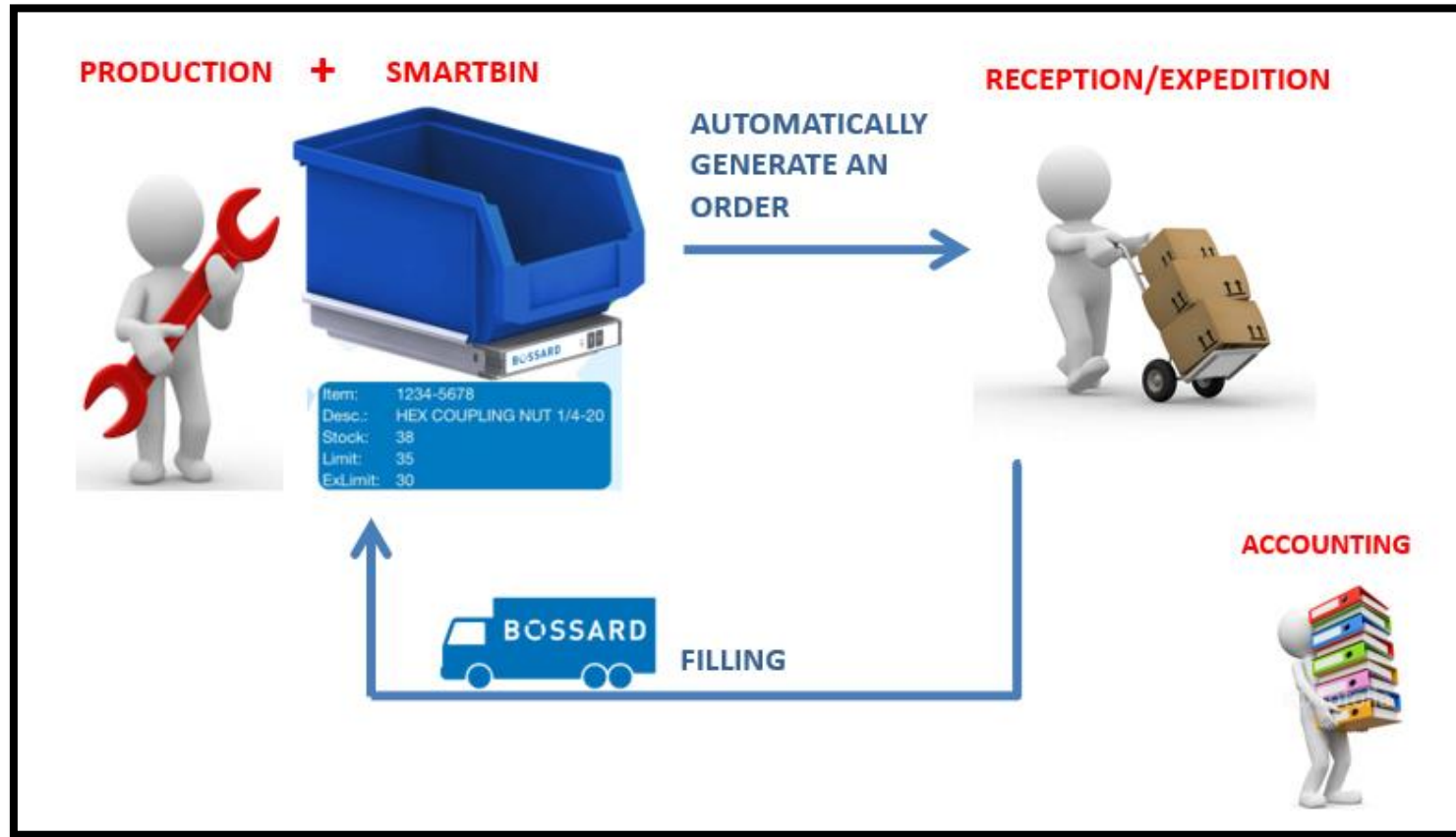
Optimization

AUTOMATED RE-SUPPLY MATERIAL REQUEST WITH SMART FACTORY



HANDLING PROCESS OF C-PART

TRANSFORM WITH SMART FACTORY LOGISTICS

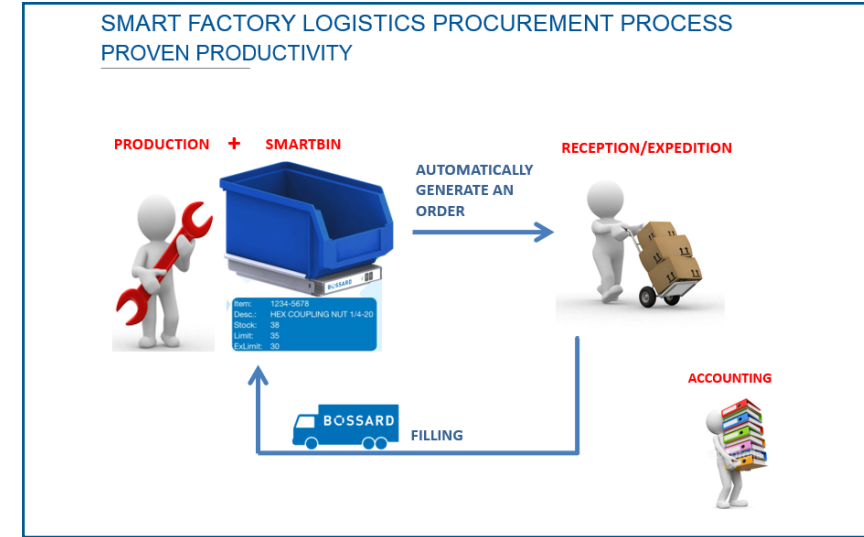
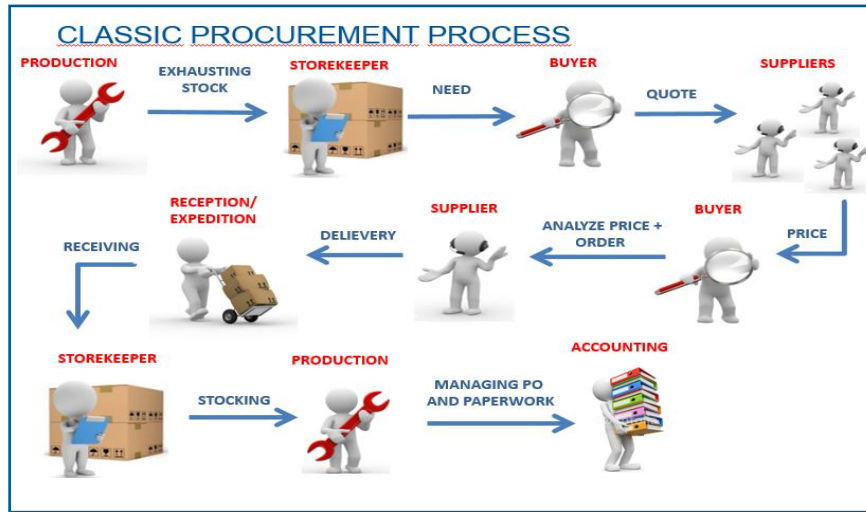


System ordering...

- Simplify
- Automated and Streamline progress
- Digital access and analytics
- Online 24/7 monitoring



SMART FACTORY LOGISTICS INDUSTRIAL 4.0 TRANSFORM TO C-PART SUPPLYING



Conventional Ordering....

- A lot of activities
- Manually progress
- Much papers works
- Waiting and motion process
- Work days monitoring

It's OK

System ordering...

- Simplify
- Automated progress
- Lower Paper work
- Streamline process
- Online 24/7 monitoring



Our Smart Factory Logistics Solution



SmartBin Cloud



FULLY AUTOMATED



WEIGHT SENSORS
Physical stock information



VISUAL PROOF



INDUSTRIAL CLOUD CONNECTION (IIOT)



ERROR PROOF
automated error recognition



24 / 7 OPERATION
Continuous inventory monitoring



ARIMS
Access to Operation Dashboard



LED
Pick-by- and Put-to-Light option

SmartLabel Cloud



VISUAL PROOF



WIRELESS



MOBILE



ADAPTABILITY
Use of existing infrastructure



Normal Status



Ordered Status



REAL-TIME INFORMATION UPDATE



FULL CYCLE CONTROL



LED
Pick-to-light enabled

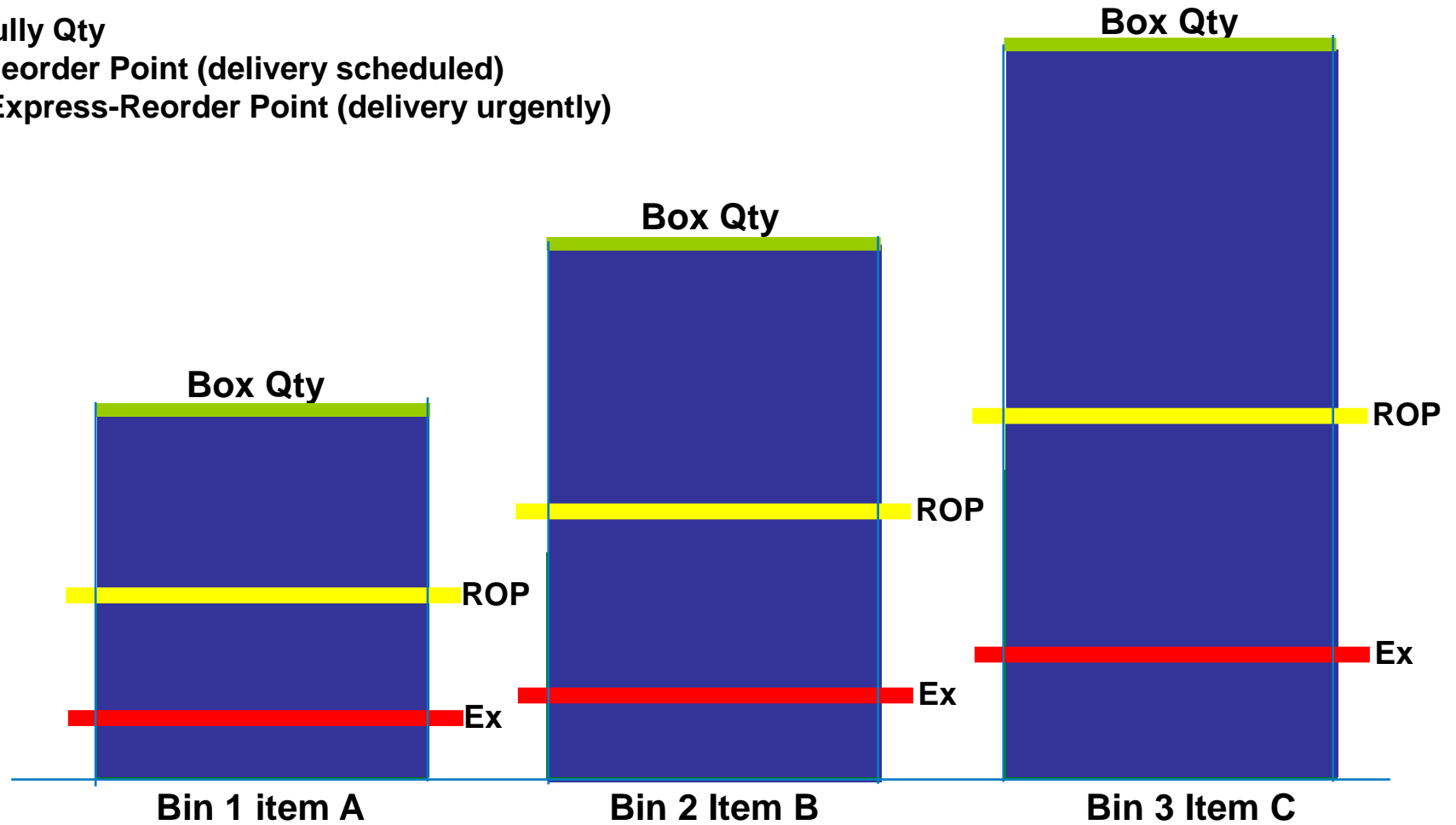


ARIMS
Access to Operation Dashboard

SMART FACTORY LOGISTICS

REPLENISHMENT – BUFFER AND REFILL

Box Qty = Fully Qty
ROP = Reorder Point (delivery scheduled)
Ex = Express-Reorder Point (delivery urgently)




BOSSARD
Proven Productivity

BOSSARD
Proven Productivity





SmartBin installed at
central supermarket



SmartBins Installed at Workstation



Mobile SmartBins on trolleys



Our SmartBin technology for managing non-fastener parts





BOSSARD

Search-by-Light, Pick-by-light and Put-to-light



REDUCED SEARCH TIMES



ELECTRONIC PICKING

Smooth and fast setup and refill process



NO MISPICKS

Eliminates picking errors



LED LIGHT SIGNAL

Pick-to-light option

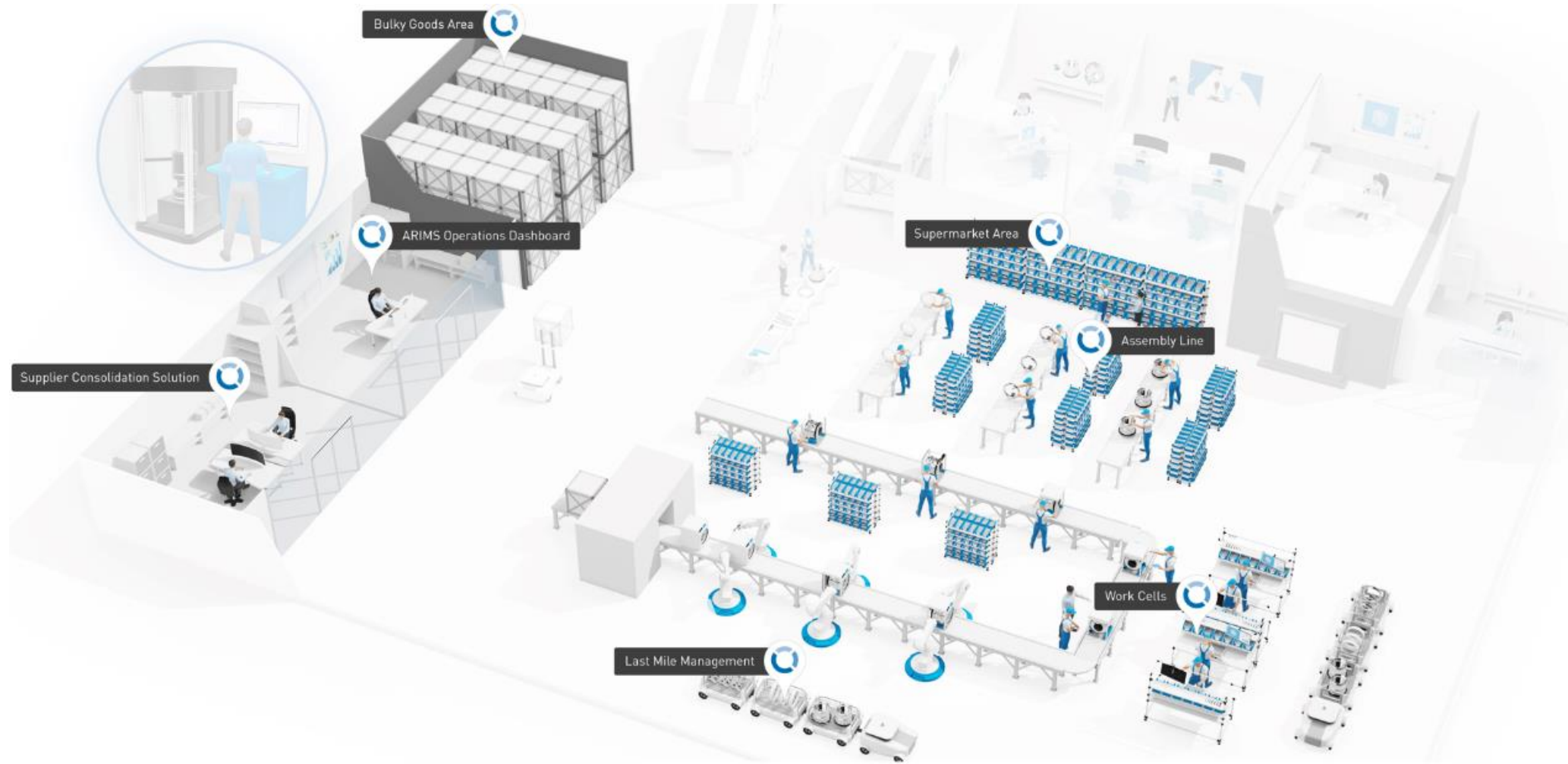


MOBILE APP

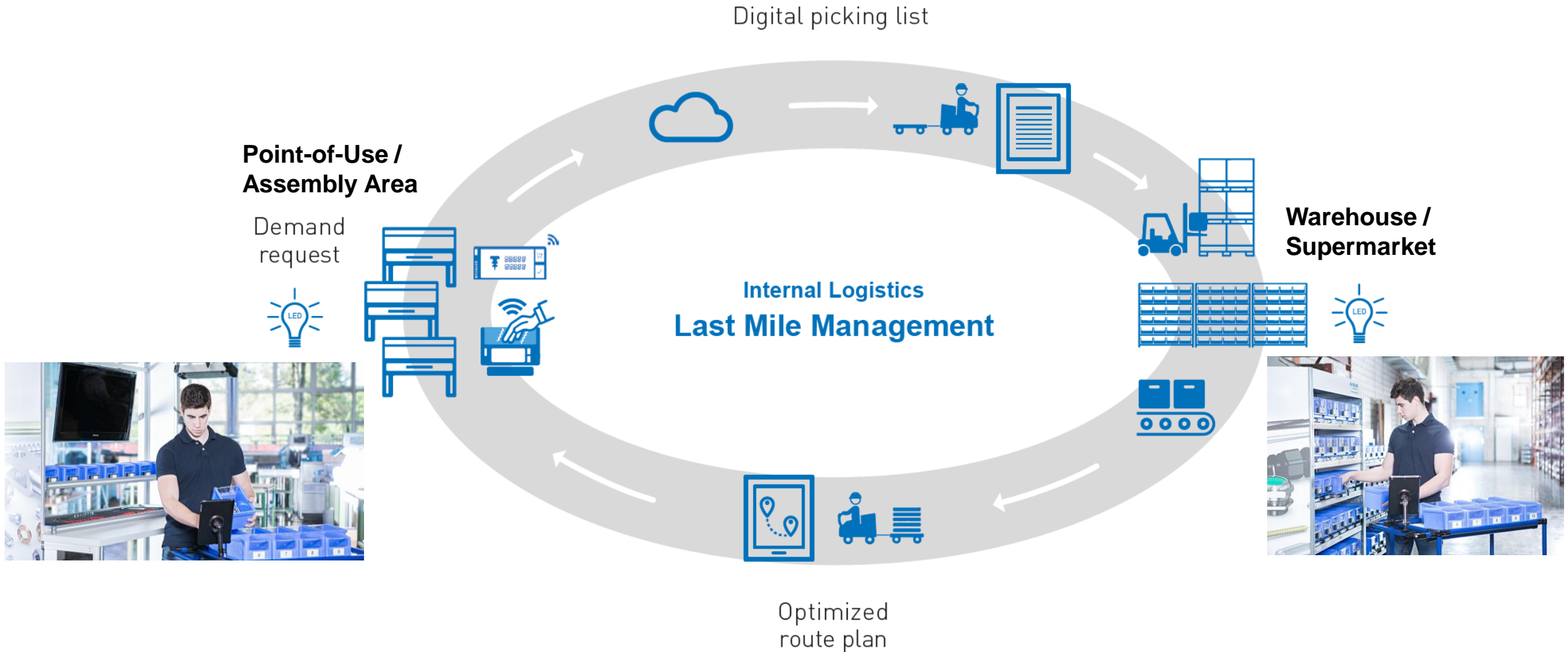
Paperless

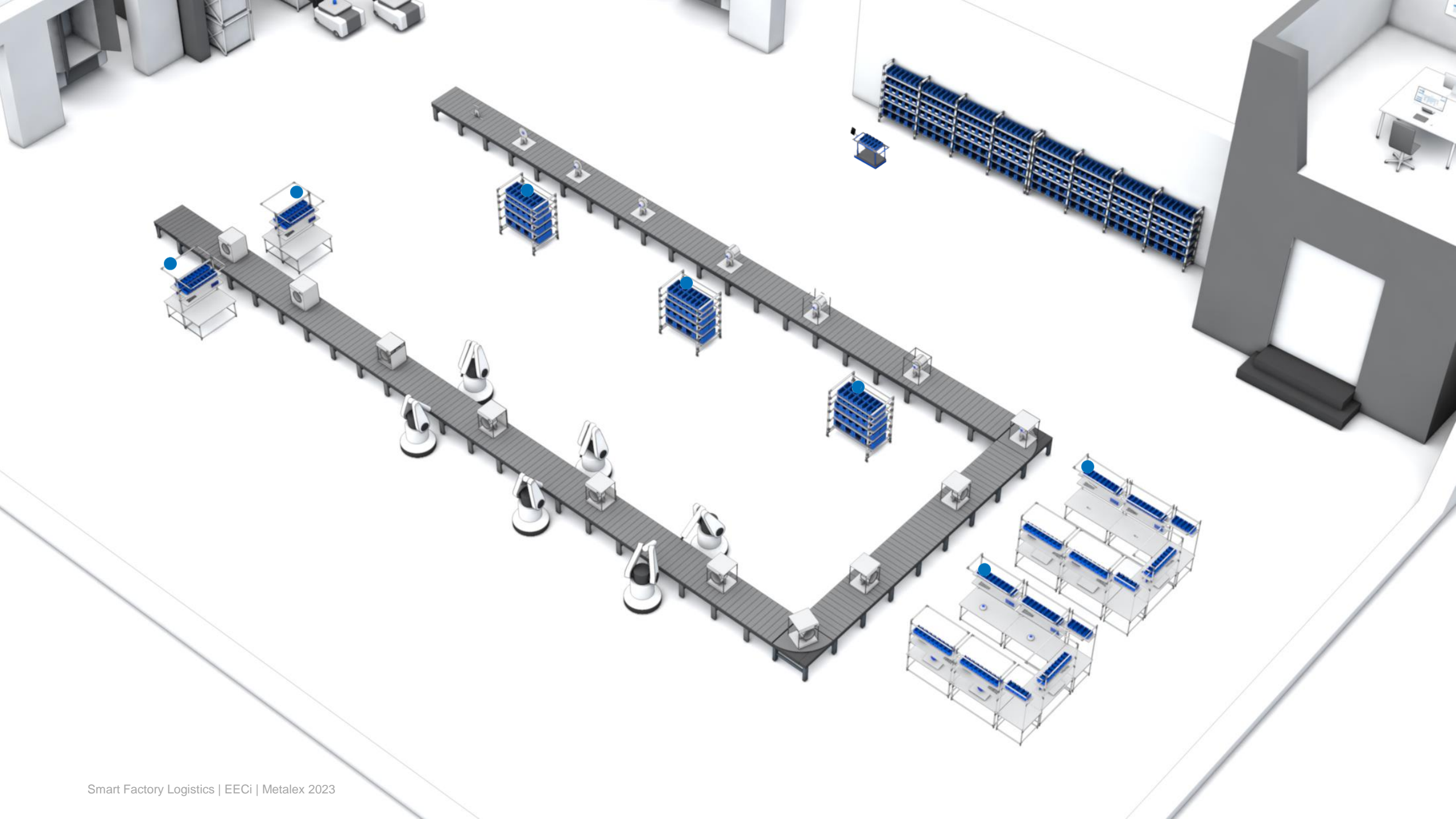


Shop floor management for internal material distribution

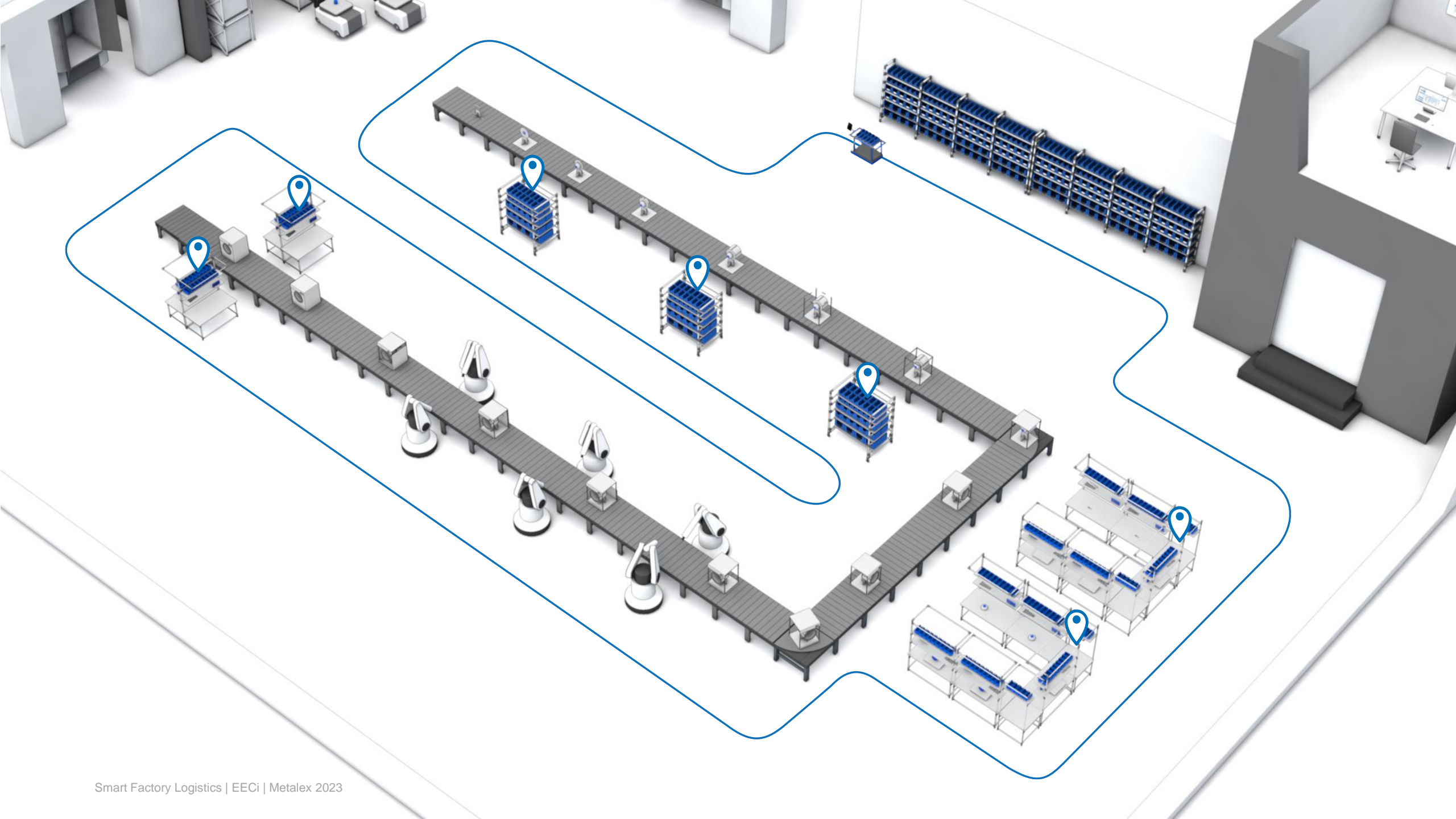


Last Mile Management w/ Search-by-Light, Pick-by-Light and Put-to-Light



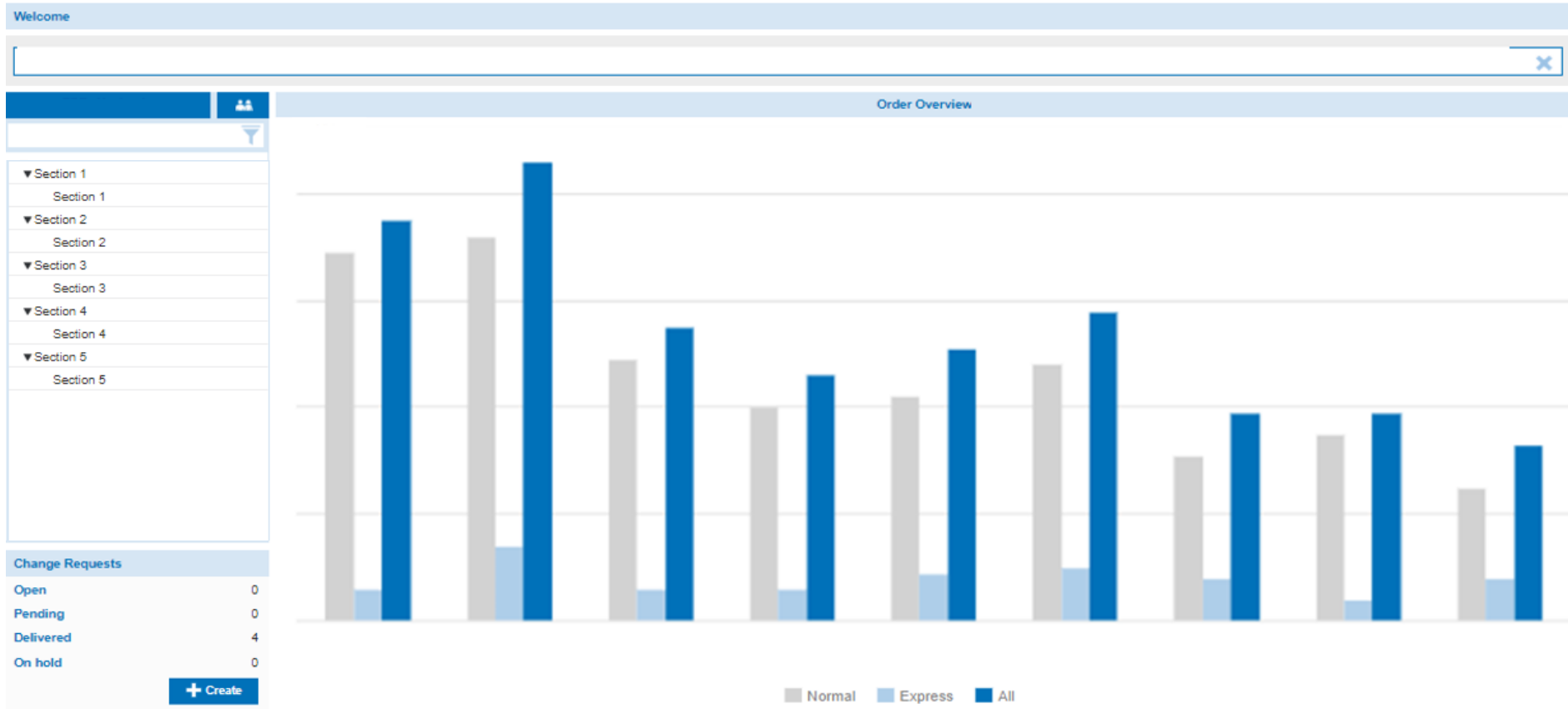






ARIMS – Data Analytics and Transparency

Administration Reports... Help Logout



Next Deliveries +

| Date | Priority | #Positions |
|--------------|----------|------------|
| Mar 19, 2019 | Express | 1 |
| Mar 25, 2019 | Normal | 12 |
| Apr 8, 2019 | Normal | 1 |
| Aug 12, 2019 | Normal | 1 |

Items

Item Overview

Stockouts

Reports

Stock list

Planned vs. Actual

System Summary

| | |
|-----------|-----|
| Sites | 5 |
| Groups | 0 |
| Locations | 5 |
| Suppliers | 6 |
| Items | 770 |
| Boxes | 813 |

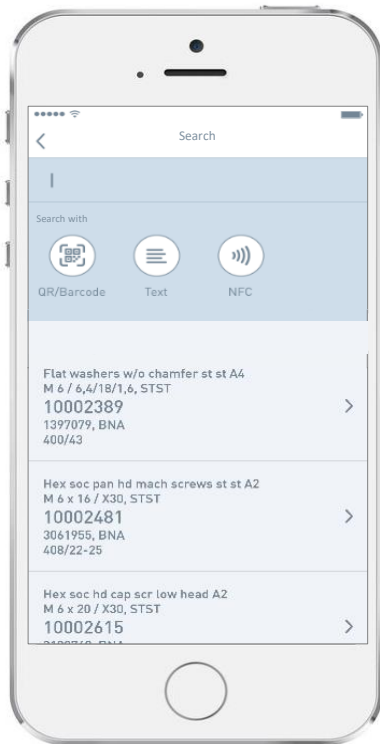
Order Summary

| | |
|-------------|----|
| Orders | 8 |
| Order lines | 19 |

L30D L12M YTD

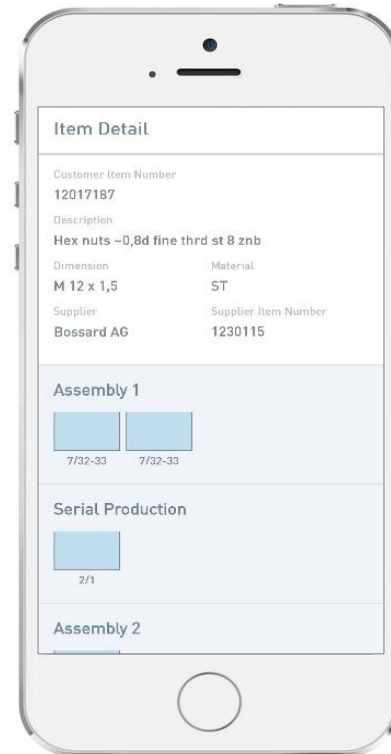
ARIMS Mobile - Real-time information on-the-go

Item Finder



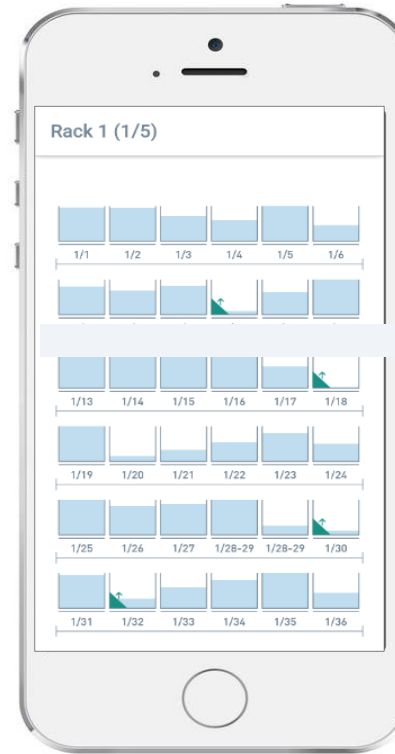
- Text
- 2D, barcode reader, text recognition
- NFC Reader (for SmartLabel)

Item Detail



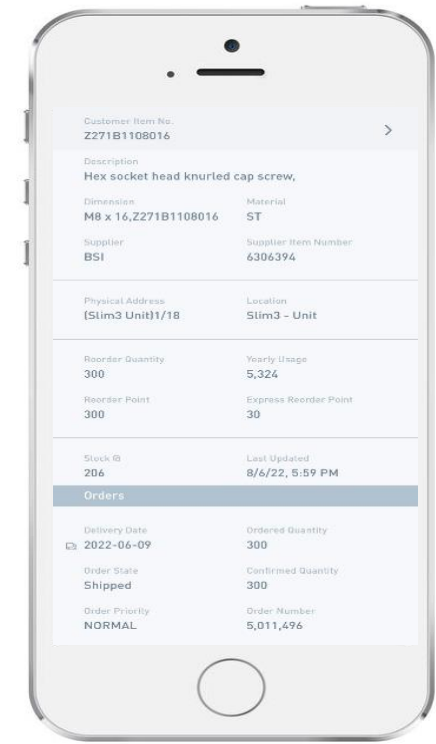
- Locations
- Filling Rate
- Order Overview

Rack Visualization



- Filling Rate
- Order Overview

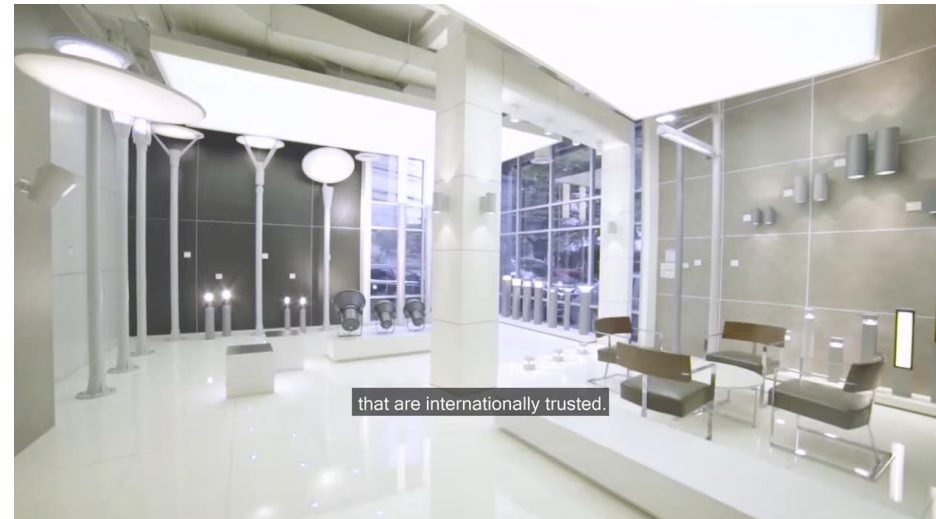
Order Details



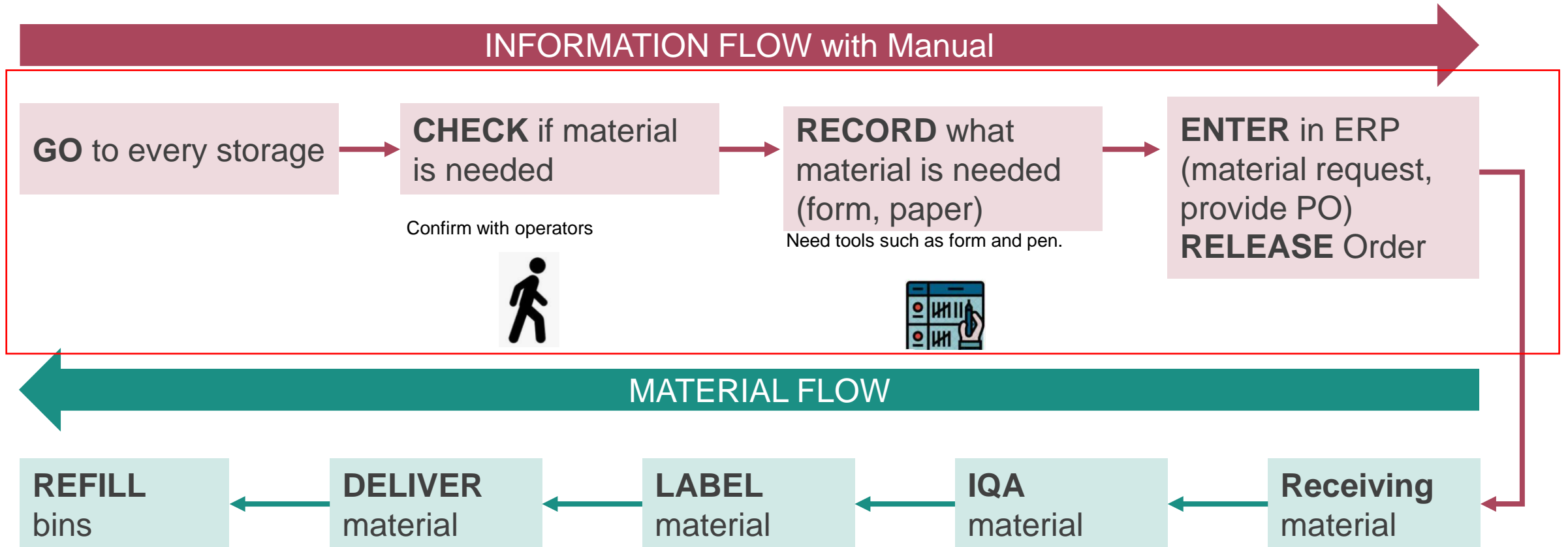
- Item Delivery Date
- Confirmed delivery qty

Smart Factory Logistics Use Cases

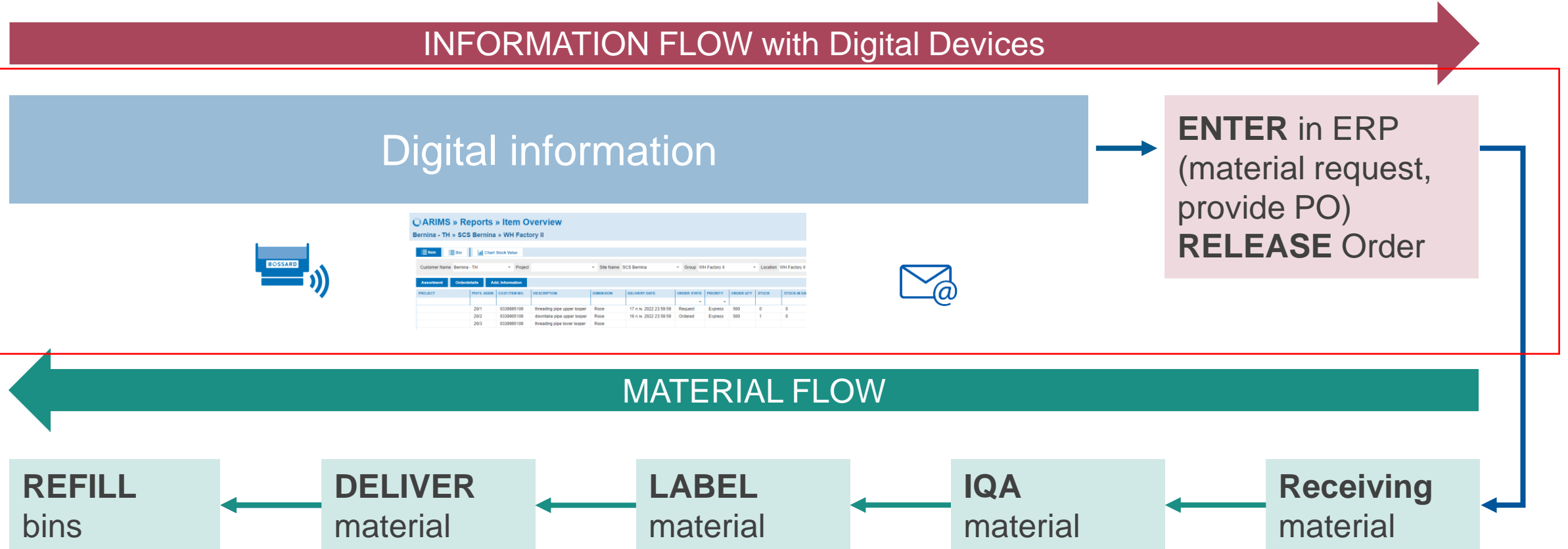
UNILAMP SMARTBIN FOR C-PART AUTOMATED



RE-SUPPLY MATERIAL REQUEST CONVENTIONAL FACTORY



AUTOMATED RE-SUPPLY MATERIAL REQUEST WITH SMART FACTORY

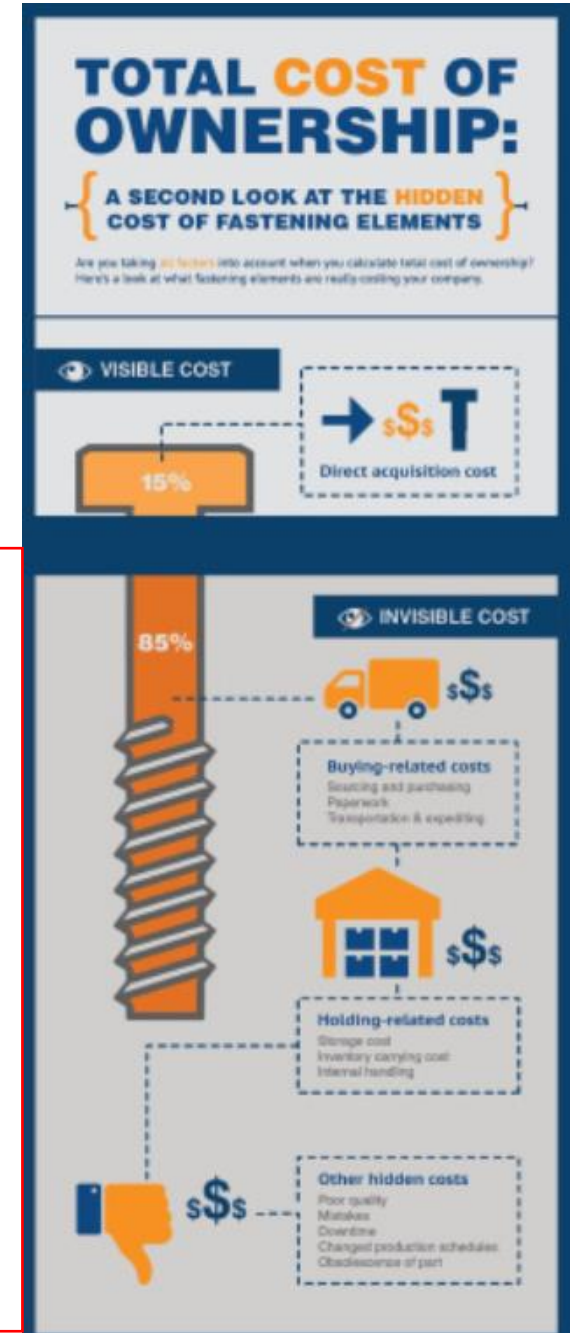
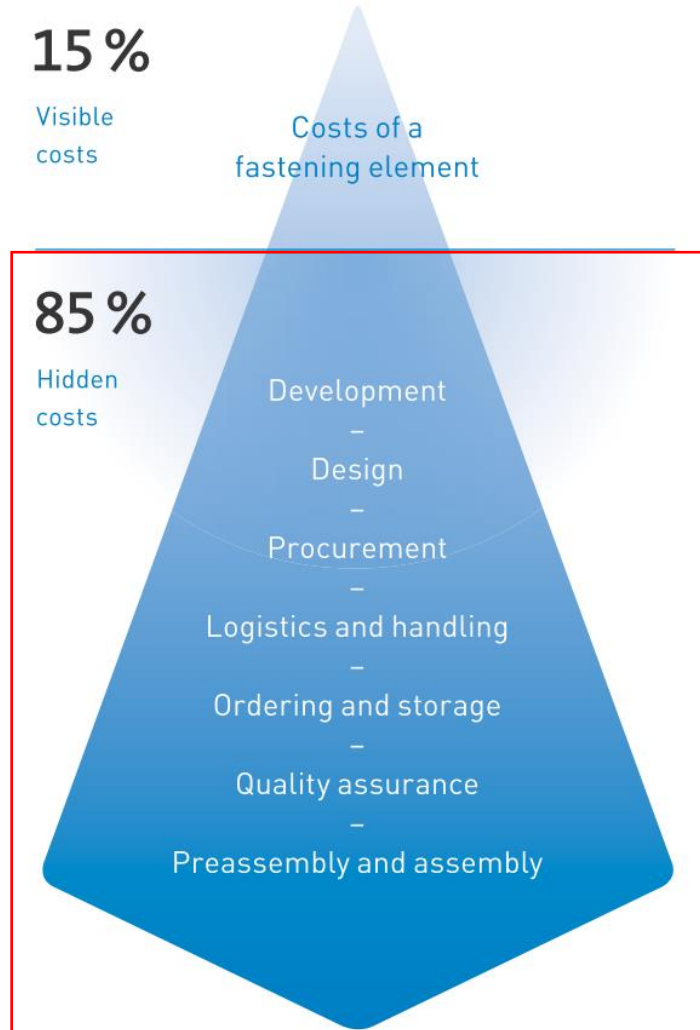


THE RULE OF 15-85

The purchase price of a fastening element is just the tip of the iceberg. At Bossard, we cut the costs of the hidden part.

Keeping production costs down right from the start – that is our goal.

The hidden aspects of fastening elements account for approximately 85 % of the total cost of ownership (TCO).



Transparency Logistics with 64% of Cost Reduction

“Bossard is one of our key strategic suppliers who has played a major part in improving our productivity and competitiveness.”

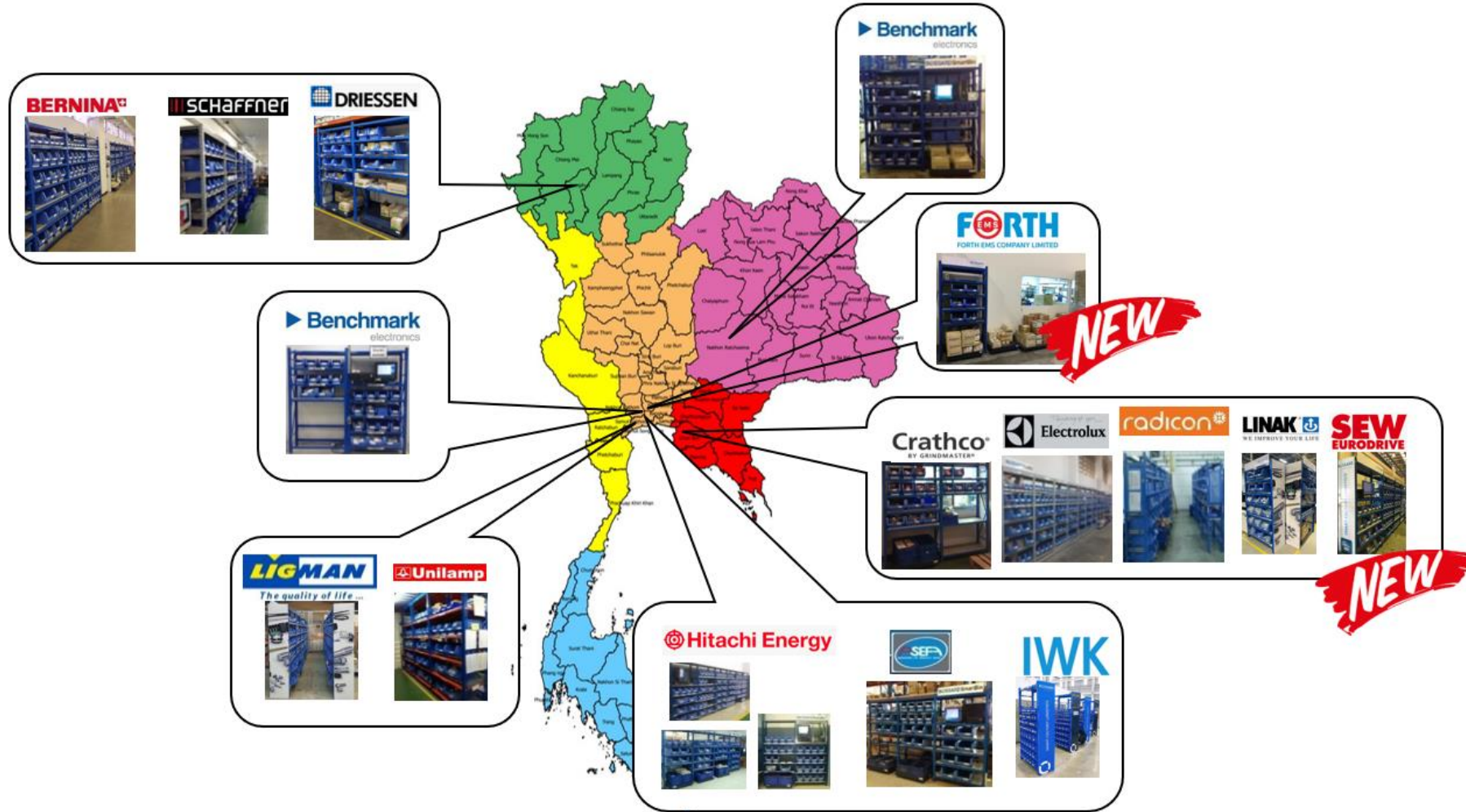
Pairoj Boonpasart
Chief Executive Officer



Our Major Customers



Smart Factory Logistics in Thailand



Future trend



There will be many waves of supply chain disruption coming in future, without early warning.

**Be like surfer
Ready to overcome and stay on top of the wave
Build resilience in your supply chain**



Supplier

Factory

Market (Customer)



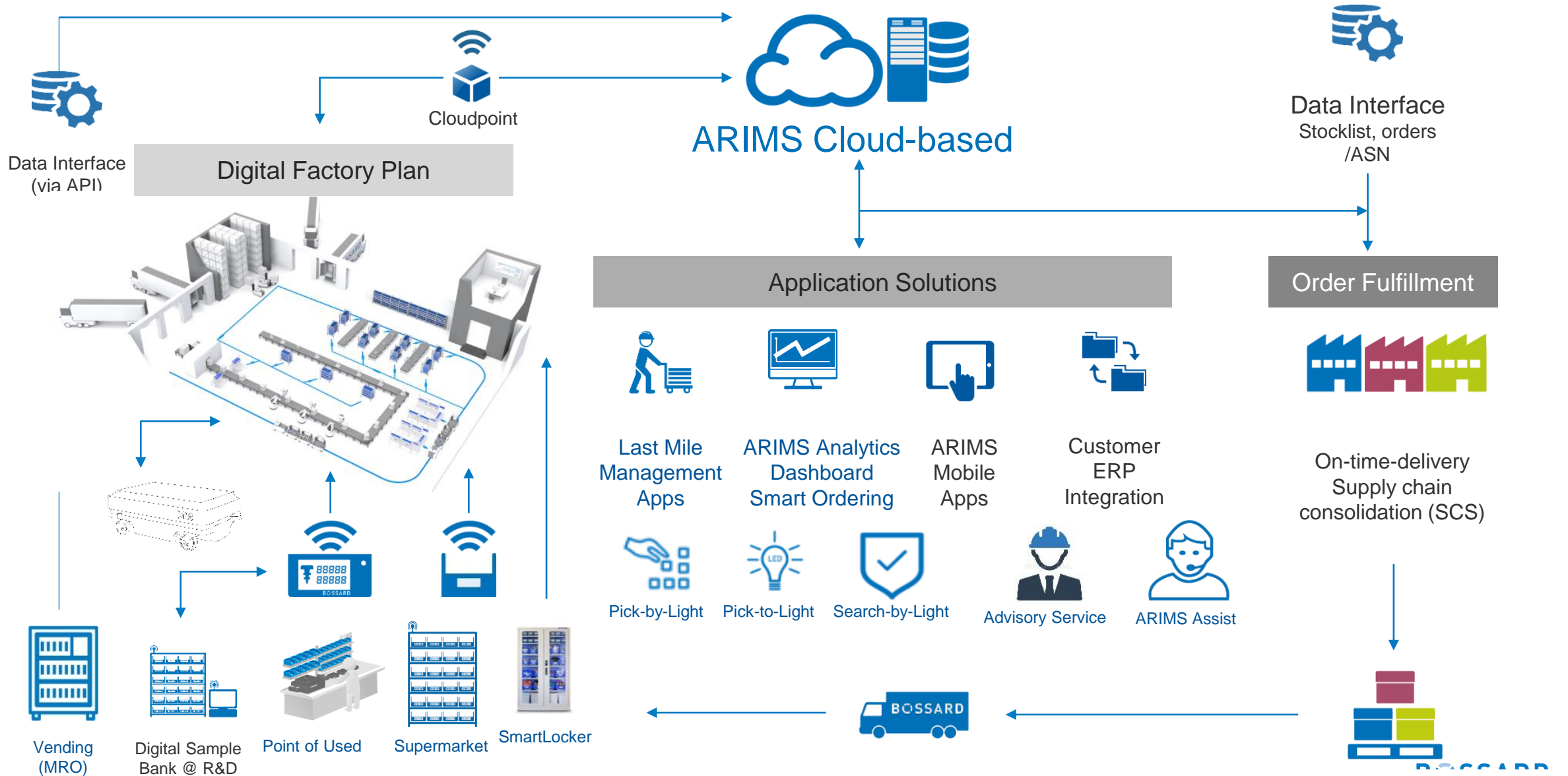
Photo : <https://www.nist.gov/mep/manufacturing-infographics/emergence-digital-manufacturing>



Productivity, is that all?

**Productivity and Sustainability
belong together**

Bossard Future Smart Factory Logistics





Shaping the future of digital innovation

Industry 4.0 | Digital Technology