



# JD LOGISTICS

TECH-DRIVEN SUPPLY CHAIN AS THE CORE COMPETITIVE EDGE



SUPPLY CHAIN SOLUTION  
INTERNATIONAL BUSINESS

# CONTENT

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SUPPLY CHAIN SOLUTION  
INTERNATIONAL BUSINESS


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- SOLUTIONS & CASES
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- CLIENT PORTFOLIO



# ABOUT JD & JDL



SUPPLY CHAIN SOLUTION  
INTERNATIONAL BUSINESS



# INTRODUCTION TO JD GROUP



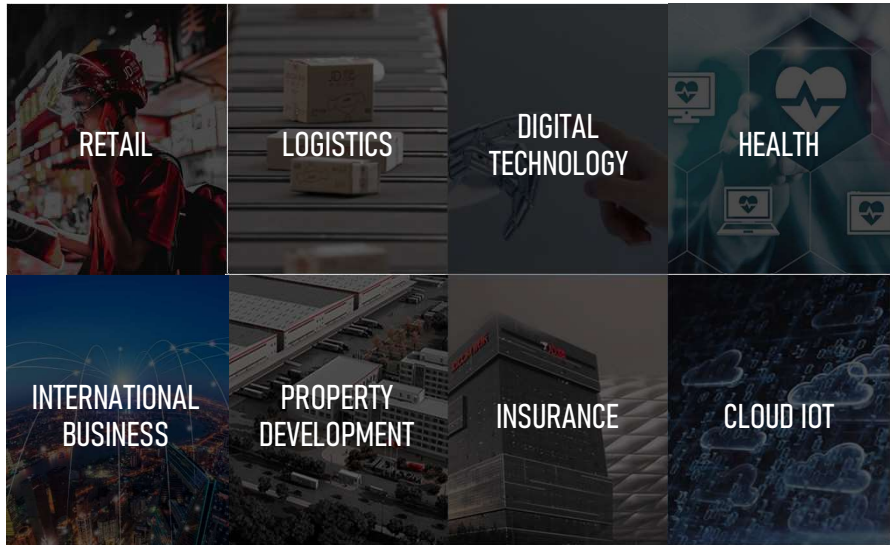
## ICONIC BRAND

- The **largest retailer** in China, active in both online and offline retail
- First Chinese internet company made to the **Fortune Global 500 list**
- Operation Income: **951.6 billion RMB**
- Active Users: over **569.7 million**
- Employees: Over 400,000
- Strict **“Zero-tolerance”** policy toward counterfeit goods. Customers trust JD because the brand is a guarantee of authenticity

## UNPARALLELED SPEED

- Largest e-commerce logistics infrastructure network in China, covering **99%** of the country’s population
- JD.com has achieved rates of over **90%** of orders being delivered same- or next-day
- The only e-commerce platform in the world to provide small-to-medium sized warehousing, oversized warehousing, cross border, cold chain delivery, frozen and chilled warehousing facilities, B2B, and crowdsourcing logistics

## LAYOUT OF BUSINESS SECTORS



## FORTUNE 500

As of 2022, JD Group is at the **46<sup>th</sup>** place of the Fortune Global 500 List



# INTRODUCTION TO JD LOGISTICS (JDL)



## THE ORIGIN AND THE GOAL

- JD Group started to construct its **own logistics system in 2007**, registered a logistics company in 2012, and officially **established JD Logistics Group on April 25, 2017**
- Currently the **largest integrated supply chain service provider** in China
- Committed to opening up fully the infrastructure, management experience, and technology accumulated in the past decade to society and **becoming the most reliable supply chain infrastructure provider in the world**

100%

City Coverage in China

25M<sub>sqm</sub>

Managed Facility Footprint

1400+

Logistics Facilities

99.5%

Population Coverage in China

190K+

Delivery Men

43+

Asia One Logistics Park

## MISSION

Lead the global efficient circulation and sustainable development under a tech-driven mindset



WAREHOUSE NETWORK



BULKY GOODS



DELIVERY NETWORK



COLD CHAIN



CROSS BORDER



CLOUD WAREHOUSE

# JDL ASIA ONE FLAGSHIP WAREHOUSES



LANGFANG



SHENYANG



SHANGHAI



DONGGUAN



TIANJIN



NEIMENGGU



BEIJING



KUNSHAN



CHENGDU



HANGZHOU

Each park above covers an average area of more than 300 mu (approx. 50 acres)

# JDL'S TWO "DRIVEWHEELS" OF INTEGRATED SUPPLY CHAIN



FMCG



FASHION



HOUSE DECOR



FRESH FOOD



AUTOMOBILE



ELECTRONICS

## CONTINUOUS OPTIMIZATION OF SUPPLY CHAIN

Reduce vacancy rate of assets, reduce operation costs, improve fulfillment timeliness

## BOOST OF CLIENTS' BUSINESS GROWTH

Improve inventory turnover, increase in-stock ratio, optimize response time

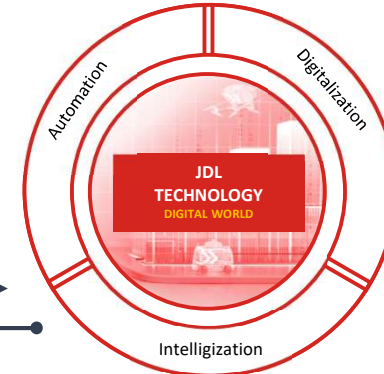
SERVING  
VARIOUS  
CLIENTS &  
SCENARIOS



## INTEGRATED SUPPLY CHAIN

Provide rich business scenarios and data

Optimize operation cost, efficiency, and customer experience  
by technology approach



# JDL SUPPLY CHAIN SOLUTIONS (JDL SCS)

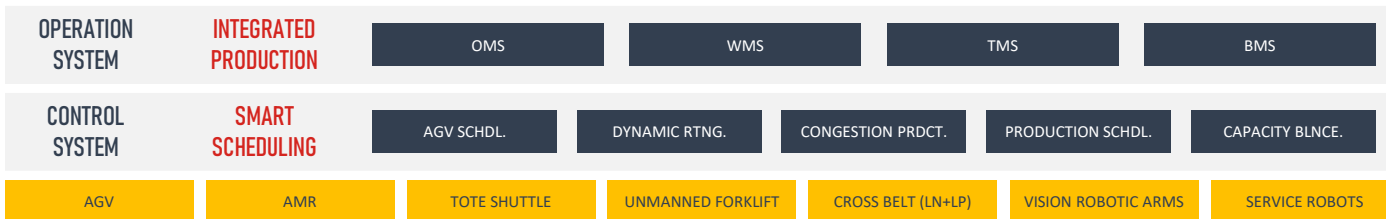


## BUSINESS DOMAIN

PLANNING &  
CONSULTANCY



TECHNICAL  
PRODUCTS



TECHNOLOGY  
EMPOWERMENT



LOGISTICS  
ECO-SYSTEM





# SUPPLY CHAIN CHALLENGES



SUPPLY CHAIN SOLUTION  
INTERNATIONAL BUSINESS



# WHERE THE MARKET AND SUPPLY CHAIN ARE GOING



## REQUIREMENTS FROM MARKET CHANGES



### PEOPLE

- Diversified demands; personalized pursuits
- Small-town youth and “silver economy”
- Lack of patience; increased demands on convenience
- Senses of personal identity and brand belonging
- Increased requirements on experience



### PRODUCTS

- Diversified products; increased SKU count
- Constant iteration of products of small batches and high frequencies
- Shortened life-span of products
- Hot-sellers, shopping seasons complicate management



### PLACES

- Integrated channels from online and offline
- Market share taken away from traditional distributors
- Diversified scenarios to reach consumers
- Repetitive impacts on offline scenarios and supply chain nodes

## MARKET TRENDS AND INSIGHTS

### TREND #1

#### REMODELED CAPABILITIES OF BRADING AND SUPPLY CHAIN UNDER OMNI-CHANNEL

- Consumers and digital insights became core strategic assets
- Revamp of management for omni-channel supply chain
- From channel oriented to consumer oriented, C2B

### TREND #2

#### DIRECT TO CUSTOMER (DTC) IS THE “MAIN MELODY” IN THE NEW CONSUMER ERA

- Faster, more effective response to consumers’ demands
- Improved efficiency to reaching the rural consumer market
- Comprehensive improvement in consumer experience

### TREND #3

#### DIGITALIZATION UPGRADE HAS BECOME A DESTINED MOVE IN THE POST-COVID MARKETS

- Faster, more effective response to consumers’ demands
- Improved efficiency to reaching the rural consumer market
- Comprehensive improvement in consumer experience

### TREND #4

#### INTELLIGIZED OPERATION AND UNMANNED OPERATION ARE THE HOLY GRAIL FOR MOST

- Intelligized factories
- Intelligized warehouses
- Intelligized carbon-neutral parks

# COMMON CHALLENGES FOR SUPPLY CHAIN MANAGEMENT



RISING COMPLEXITIES OF DEMANDS AND SUPPLIES



BRANDS ERGE FOR DIGITAL UPGRADES



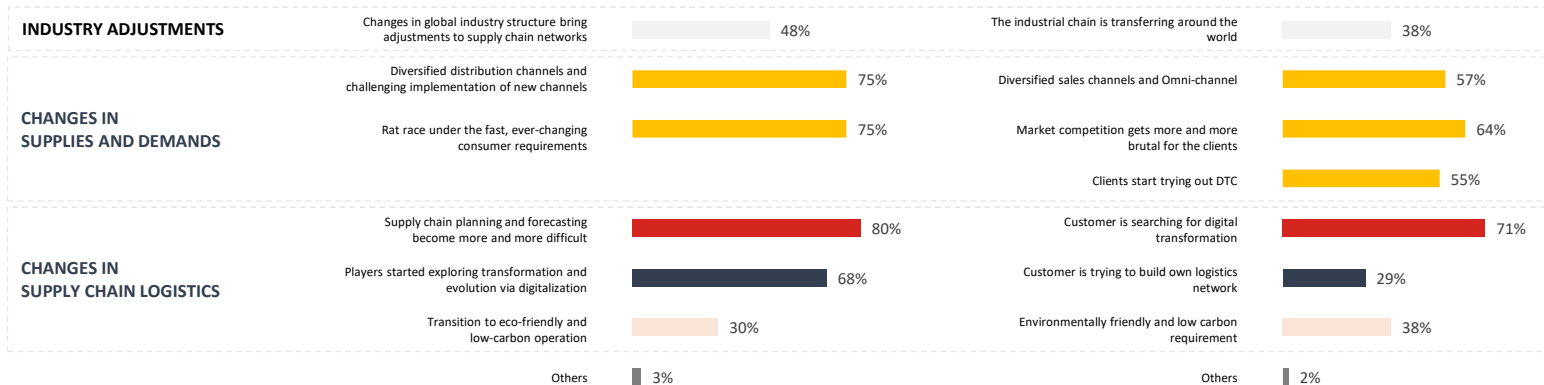
CROSS-BORDER BUSINESS THRIVES



MANUFACTURING SUPPLY CHAIN UPGRADES

## BUYERS' PERSPECTIVE Changes in industries and corporate supply chains

## LOGISTICS PERSPECTIVE Perceptions of the changes undergone by the clients



Data Source: LogClub

# EFFICIENT SUPPLY CHAIN NETWORK IS BECOMING THE CORE COMPETENCE



## THE ERA OF SUPPLY CHAIN COMPETITION

- In 2021, the revenue of supply chain digitalization services in China **reached 2.8 trillion RMB (approx. 400 billion EUR)**
- Global economic context, industry environment, and requirements for technological innovation are constantly changing
- Efficient and stable supply chain through digitalization can help players maximize benefits gained from available resources and **maintain a leading position in the market**

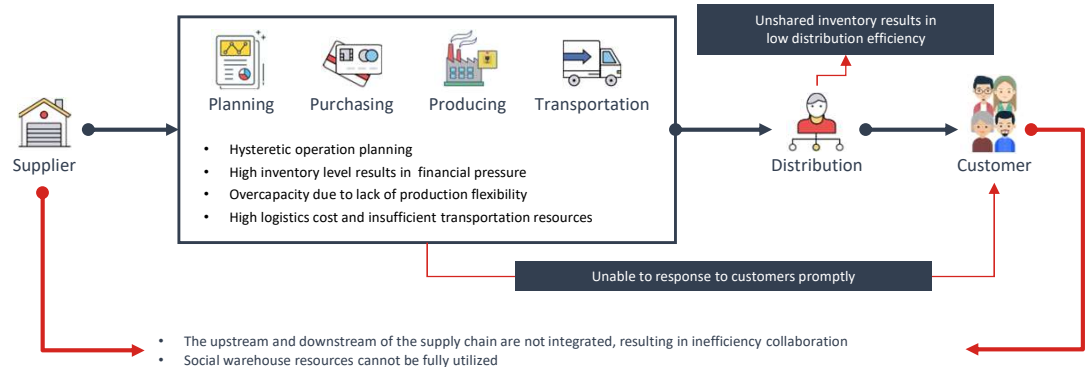
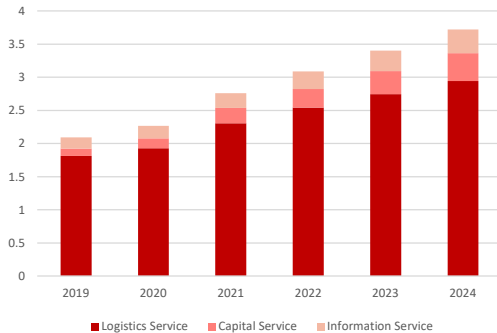
## TRADITIONAL SUPPLY CHAIN AT STAKE

- Digitalization on the demand end has been developing rapidly, but hysteric on the supply end due to **complexity of operations** and **diversity of business models**
- Logistics resources in society cannot be fully utilized due to the **lack of connectivity between systems**
- The low level of automation and digitalization results in **poor throughput in production and logistics**, as well as **overstock and capital pressure during distribution**

## JDL TECH-DRIVEN SUPPLY CHAIN SOLUTIONS

- JDL is capable of rendering digital technology and services, logistics services, capital services, and information services
- Improves **individual nodes along the supply chain** by providing automation solutions and digitalization solutions
- Improves also the overall efficiency of the supply chain by **integrating supply chain resources throughout society** and enhancing collaboration efficiencies at a larger scale, reducing costs and increasing growth

Revenue of Supply Chain Digitalization in China (trillion)







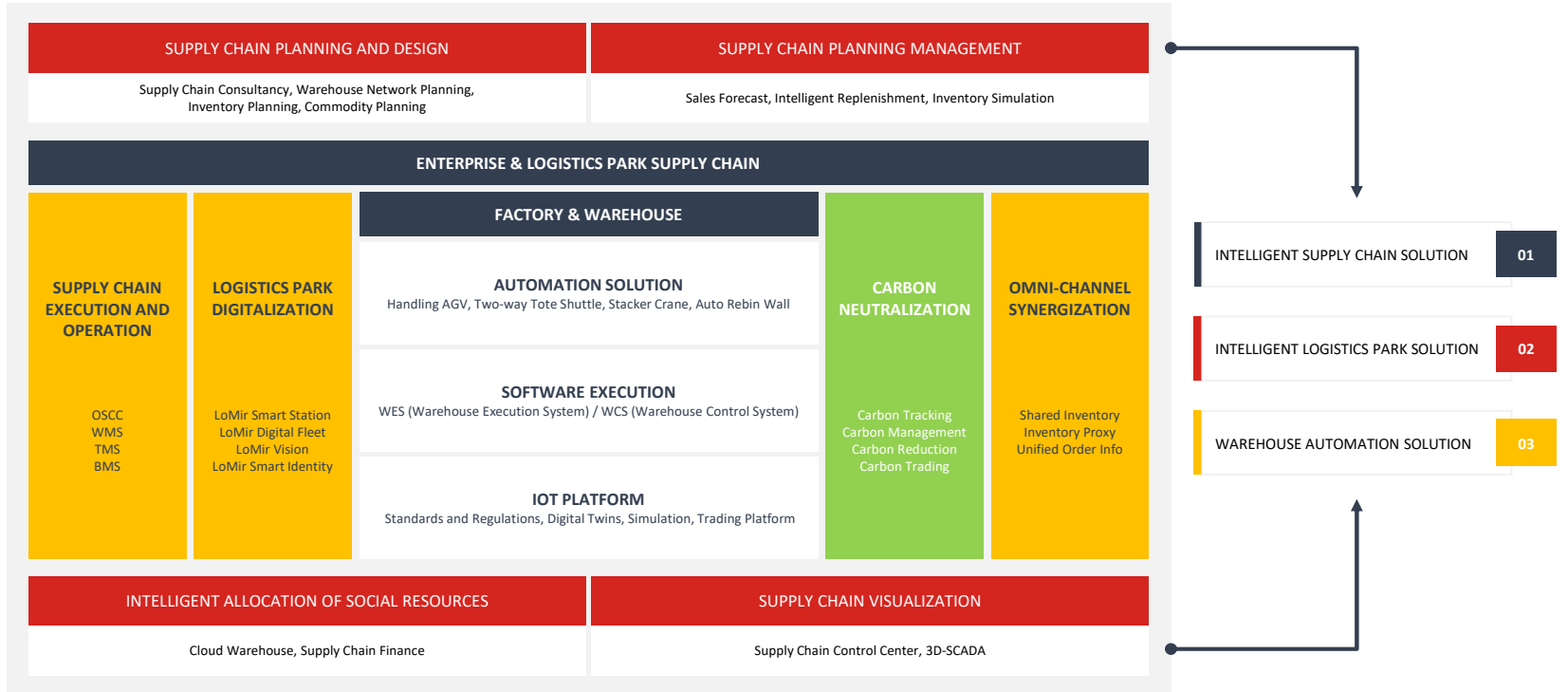
# SOLUTIONS & CASES



SUPPLY CHAIN SOLUTION  
INTERNATIONAL BUSINESS



# OVERVIEW OF JDL TECH-DRIVEN SOLUTIONS



# TYPICAL CASE - INTELLIGENT SUPPLY CHAIN SOLUTION



## BACKGROUND

Company A (China) is an international leading brand of healthcare products. In 2018, the company started to cooperate with JDL in supply chain digitalization and intelligization to solve issues inherited from traditional supply chain models, and realize refined operation, improving the company's **service capability, fulfillment timeliness, and customer experience**.

### Traditional Supply Chain Management and Pain Points

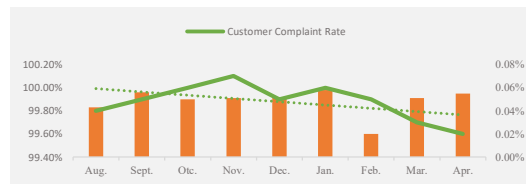
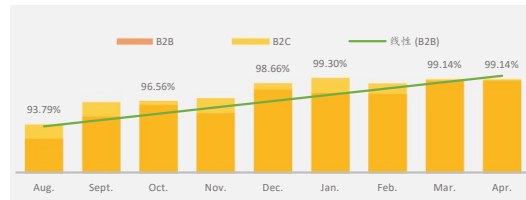
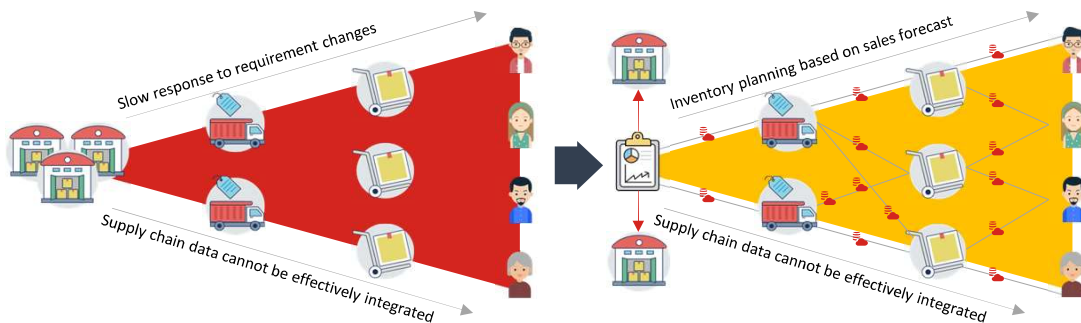
- Company A had been adopting the PUSH model; by stacking up safety inventory, the company ensured the goods arrival rate and customer experience
- However, end-to-end data integration, supply chain analysis, and sales forecasting are not available

### Adopted JDL Intelligent Supply Chain Model

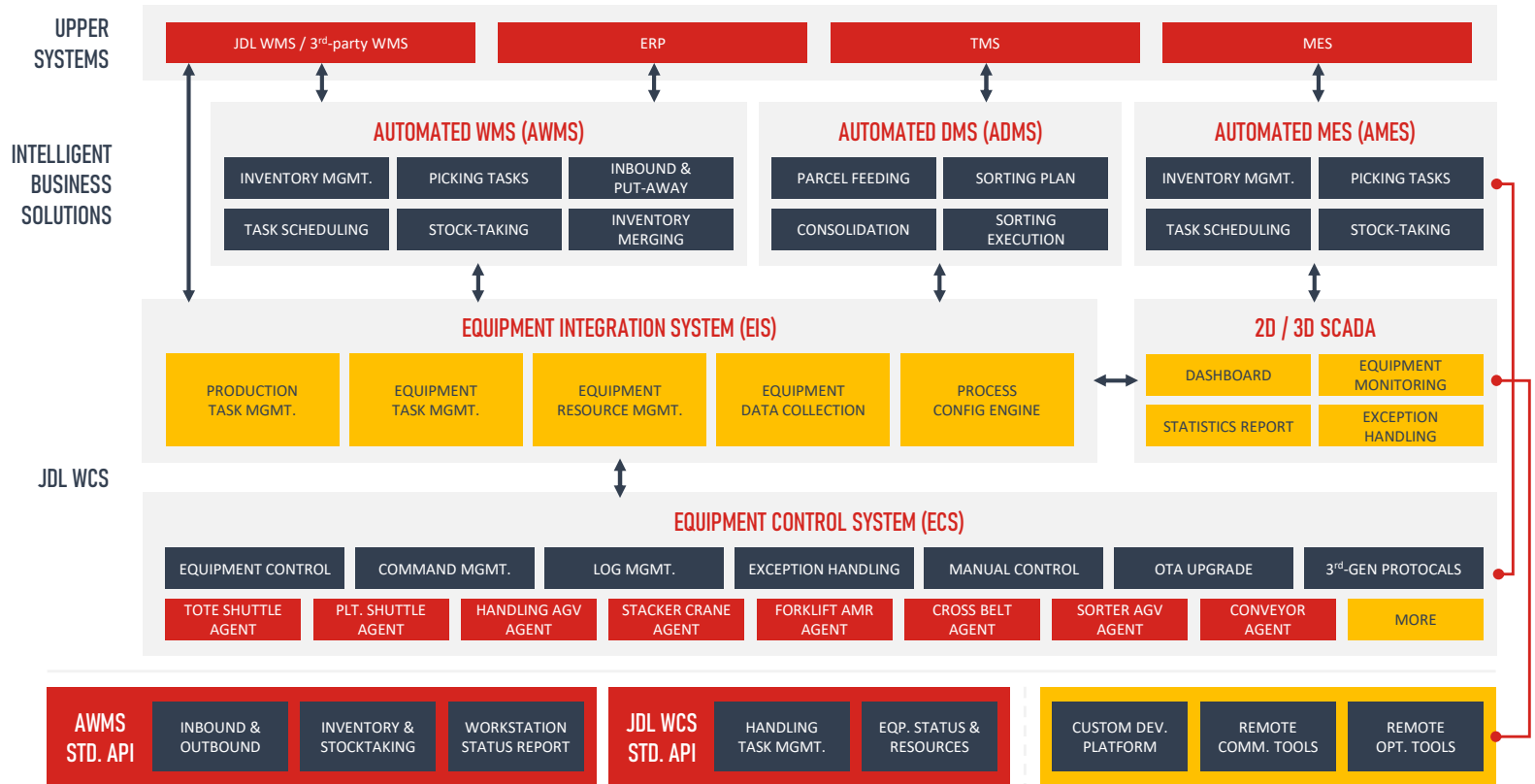
- Customized Supply Chain Management System, built from big data and professional experiences.
- Covers warehouse segmentation planning, order volume forecast, replenishment strategy design, order jamming monitor, and proxy operation services

### Reduce Cost and Improve User Experience

- Logistics costs decreased by 10%; delivery timeliness increased by 6%; inventory turnover decreased from 70 to 50 days; **total supply chain costs reduced by 10 million RMB per year**
- Greatly improved customer experience and satisfaction



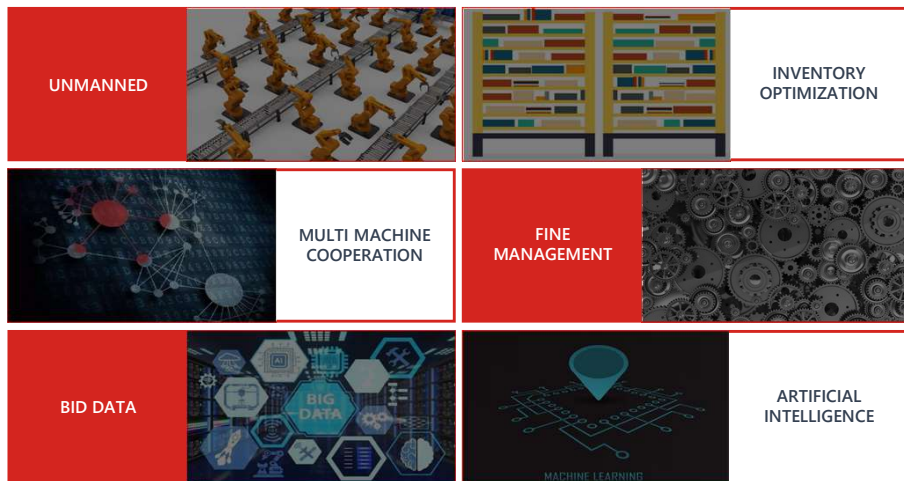
# STRUCTURE OF JDL AUTOMATION SOLUTIONS



# JDL WCS - CORE COMPETENCY OF JD



## INTELLIGENT EQUIPMENT | DATA DRIVEN | OPTIMIZED ALGORITHM



- Integrates a variety of smart equipment; each piece of equipment is connected by corresponding sub-module of the management system for integrated operation.
- Connects to upstream systems and receives tasks, which are then split, transmitted, and managed reasonably by the WCS task center.
- Realizes eventually the collaboration of multiple equipment with prioritized missions, realizing the production goal of less-manned or un-manned production.

**HIGH  
COMPATIBILITY**

**39**

**BRANDS OF HARDWARE ALREADY  
INTEGRATED WITH JDL WCS**

# JDL WCS - CORE COMPETENCY OF JD



## ADVANTAGES OF IMPLEMENTING JDL WCS

### OPERATION OPTIMIZATION

- Storage optimization
- Distribution optimization
- Warehouse network optimization
- Cost optimization

### PROVEN EXPERIENCE

- 50 Asia One Logistics Park (28 in operation; 22 under construction)
- Rich experiences and cases in different industry contexts

### INTELLIGENT SYSTEM

- Accurate equipment scheduling
- Model and algorithm development for business forecast
- Scalable WCS safety deployment

### SERVICE & INNOVATION

- 7\*24 on-call support available
- On-site engineer available
- Joint R&D and innovation

# JDL INTELLIGENT WAREHOUSING SOLUTIONS



## ICONIC IMPLEMENTATION - 5G LOGISTICS PARK

- Featuring **high speed** and **low delay** to greatly improve the connectivity and interaction capabilities among various equipment.
- Comprehensively improve the management capabilities of personnel, vehicles, security, production, operation and maintenance by leveraging **5G+IoT+AI technologies**.
- **Passive, traditional management to active, intelligent management**, to achieve an intelligent logistics park with a **quick decision-making** operation pattern.

## THE PIONEER - BEIJING ASIA ONE WAREHOUSE

Through the integration of 5G+IoT+AI technologies, the flagship logistics park improves: Vehicle Traffic Efficiency by **60%**, Platform Utilization by **30%**, Operation Scheduling Efficiency by **60%**, and Exception Handling Timeliness by **98%**.



# 78

STACKER CRANES  
MASSIVE INTEGRATION

DONGGUAN  
ASIA ONE  
FLAGSHIP  
WAREHOUSE





# JDL INTELLIGENT WAREHOUSING SOLUTIONS



## OTHER NOTEWORTHY CASES

HEFEI 2017 FG WAREHOUSE



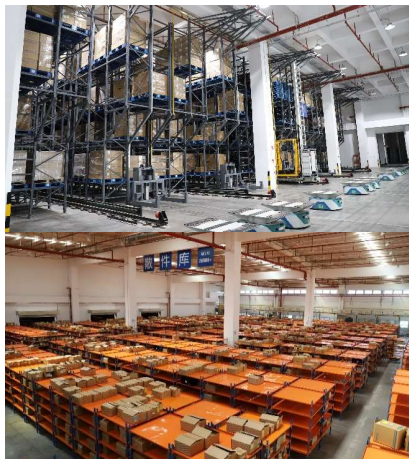
**MAIN EQUIP.**

Shuttle, Stacker Crane, Lift, Conveyor,  
Automated Packing, Automated Labeling

**SCALE OF INVESTMENT**

Approx. 10.3M EUR

KUNSHAN 2018 RM WAREHOUSE



**MAIN EQUIP.**

Handling AGV, Stacker Crane, Conveyor

**SCALE OF INVESTMENT**

Approx. 17.1M EUR

SUZHOU 2019 3PL WAREHOUSE



**MAIN EQUIP.**

Shuttle, Lift, Conveyor, Scale

**SCALE OF INVESTMENT**

Approx. 4.5M EUR

WUHAN 2020 SMT WAREHOUSE



**MAIN EQUIP.**

Totes-to-person AGV

**SCALE OF INVESTMENT**

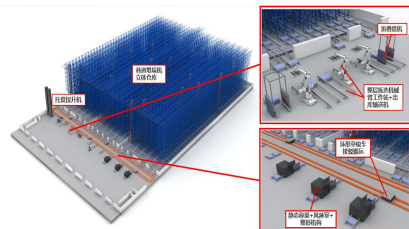
Approx. 0.6M EUR

# JDL INTELLIGENT WAREHOUSING SOLUTIONS



## OTHER NOTEWORTHY CASES

### FEIHE 2021 DAIRY WAREHOUSE



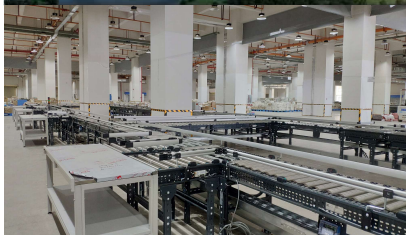
#### MAIN EQUIP.

Shuttle, Stacker Crane, Conveyor, Robotic Arms, Handling AGV

#### PERFORMANCE

B2B + B2C HYBRID SCENARIO

### 2021 BOOK WAREHOUSE



#### MAIN EQUIP.

Handling AGV \* 100, Conveyor \* 1.2km  
Cross-belt Sorter

#### PERFORMANCE

Storage capacity 500K pcs

### 2021 3C WAREHOUSE



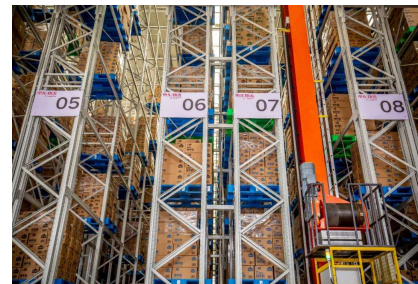
#### MAIN EQUIP.

Double-deep Stacker Crane  
Two-way Tote Shuttle

#### PERFORMANCE

Storage footprint saved 10K sqm.

### SHANDONG 2021 LOGISTICS PARK



#### MAIN EQUIP.

HANDLING AGV, Stacker Crane, Double-deep RACK, Linear Cross-belt Sorter

#### SCALE OF INVESTMENT

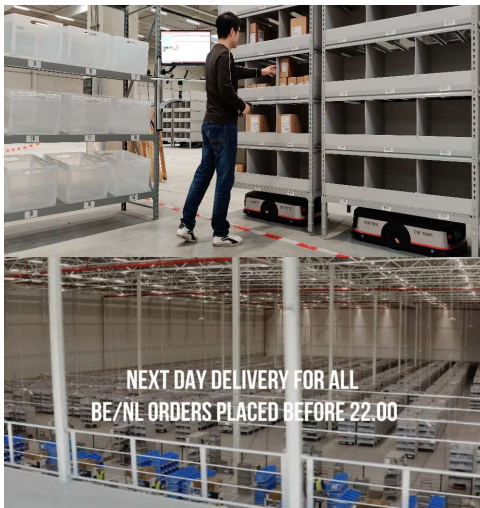
Intelligent logistics park + Automatic warehouse



# JDL INTELLIGENT WAREHOUSING SOLUTIONS



## GERMANY & NETHERLANDS 2020/2021



**MAIN EQUIP.**  
JDL AGV \* 180

### PERFORMANCE

Improve operation efficiency by nearly 2.5 times  
Realize multi scenario business  
Improve inventory turnover and optimize consumers' shopping experience

## POLAND 2021 & 2022



**MAIN EQUIP.**  
JDL AGV \* 72; Cross-belt Sorter; Conveyors

### PERFORMANCE

Improve operation efficiency by nearly 2.5 times  
Flexible put-away and picking options  
Extendable system structure  
Streamlined and “future-proof” operation

## SOUTH KOREA 2021



**MAIN EQUIP.**  
JDL AGV \* 22

### PERFORMANCE

Labor costs and operation error rate reduced, and operation efficiency greatly improved  
40% increase in storage capacity and 50% increase in operation efficiency

# JDL INTELLIGENT WAREHOUSING SOLUTIONS






# HARDWARE LINE-UP

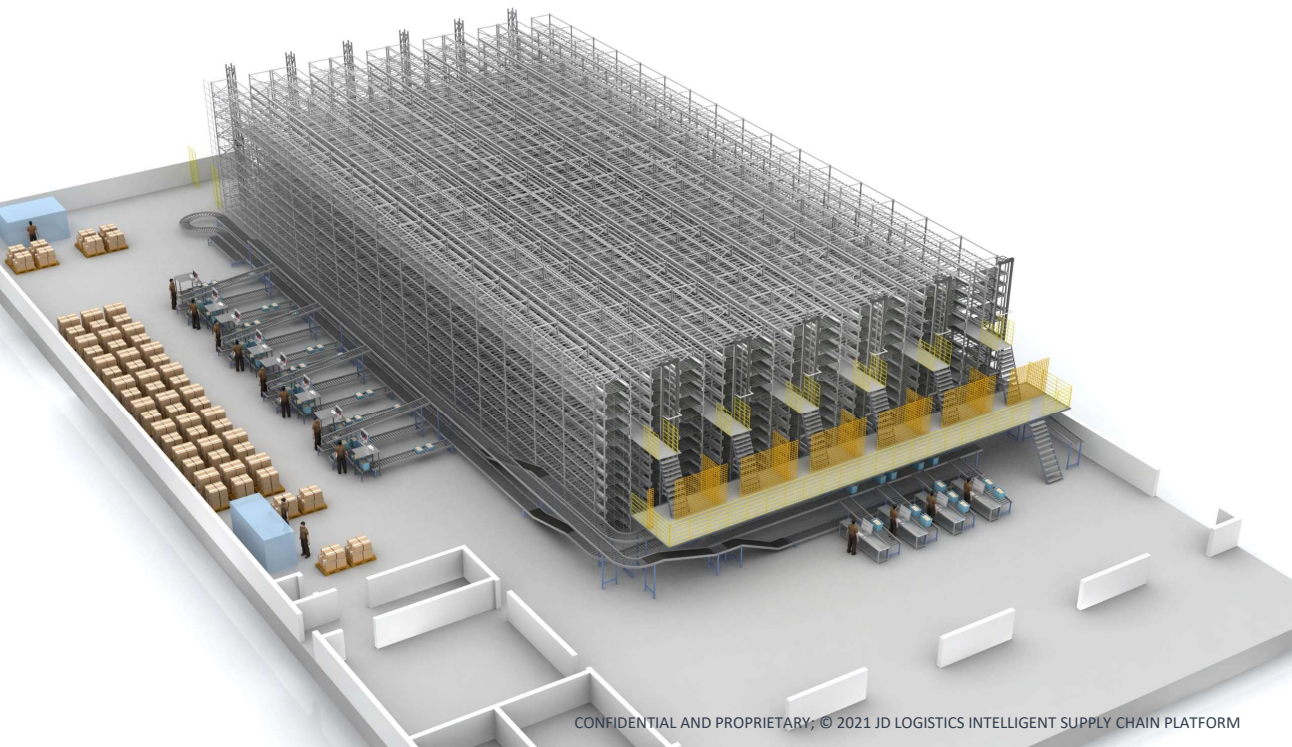


SUPPLY CHAIN SOLUTION  
INTERNATIONAL BUSINESS



# MAJOR EQUIPMENT - TOTE SHUTTLE

CONSISTS OF SHUTTLES, SHUTTLE RACKINGS, LIFTS,  
WORKSTATIONS, CONVEYORS



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## SUITABLE FOR

MEDIUM AND SMALL PARCELS

## IMPLEMENTATION

E-COMMERCE, 3PL, GROCERIES, GARMENTS,  
PHARMACEUTICALS, COLD STORAGE, ETC.

### HIGH STORAGE DENSITY

- High degree of vertical space utilization
- Improve unit storage capacity by 2~3 times

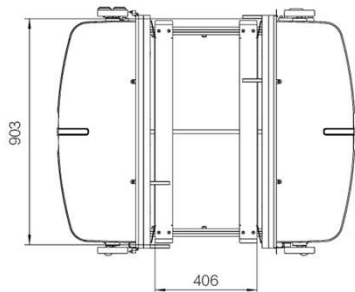
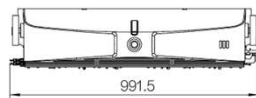
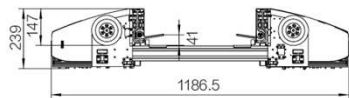
### HIGH OPERATION EFFICIENCY

- Fast inbound / outbound operation
- Improve per labor efficiency by 3~5 times

### HIGHLY AUTOMATED

- High locomotion speed and precision
- Stable performance with safety monitoring
- High picking precision

# MAJOR EQUIPMENT - TOTE SHUTTLE



## SPECIFICATION

PROPERTY	VALUE
LOAD UNIT DIMENSION	L400*W600*H(100~400) (mm)
PAYLOAD	30 kg
POSITIONING ACCURACY	< ±3 mm
POWER SUPPLY	Conductor Lines / Super Capacitor
RATED OPERATING SPEED (EMPTY LOAD / FULL LOAD)	4,000 mm/s
RATED OPERATING SPEED (FULL LOAD / FULL LOAD)	4,000 mm/s
COMMUNICATION	WIFI
ADAPTIVE TEMPERATURE	0~45 °C

## FUNCTION

- Tote-base goods-to-person solution
- Storage for low- to mid-liquidity SKUs
- Double-deep design makes high storage density
- Lower Shuttle body, suitable for lower rack



# CASE SHARING - CUSTOMS BONDED WAREHOUSE

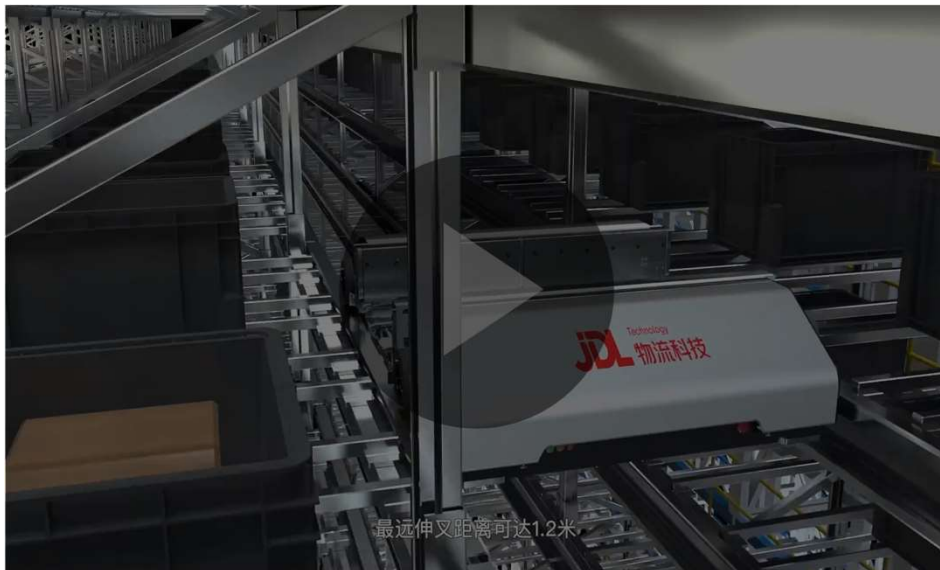


## OVERVIEW

- Duty-paid and Bonded Area: 1800 sqm
- Storage Height: 20m
- Thousands of SKUs

## PERFORMANCE

- Save more than 10,000 square meters of storage area
- Picking efficiency improved by 80%
- Operation accuracy increased to 99.99%





# CASE SHARING - DONGGUAN DC



## OVERVIEW

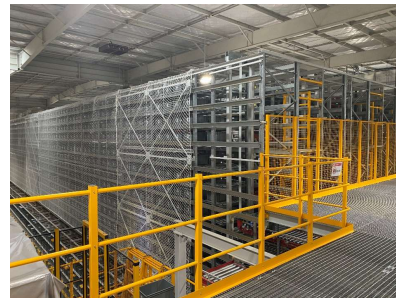
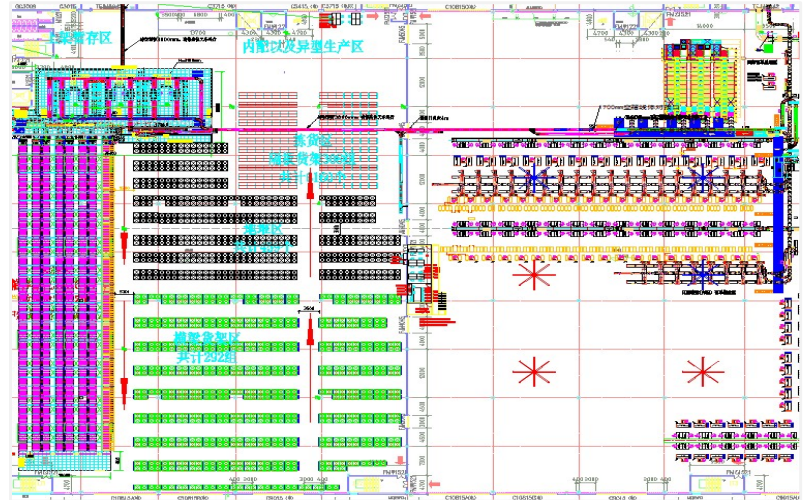
- Beauty products; 2,500 sqm
- Resolved Issues: low human efficiency, intensive workload, low space utilization, etc.
- Hot spot allocation + Pre-production to improve outbound efficiency during peak season

## CONFIGURATION

- 64 Tote Shuttles; 8 Lifts; 34K Storage Slots; 5 months construction period
- 6 Picking + 8 Put-away Workstations
- Regular (Peak) Season Eff.: 20K (40K) orders; 50K (140K) pcs
- Regular (Peak) Season Storage: 800K (1.2M) pcs

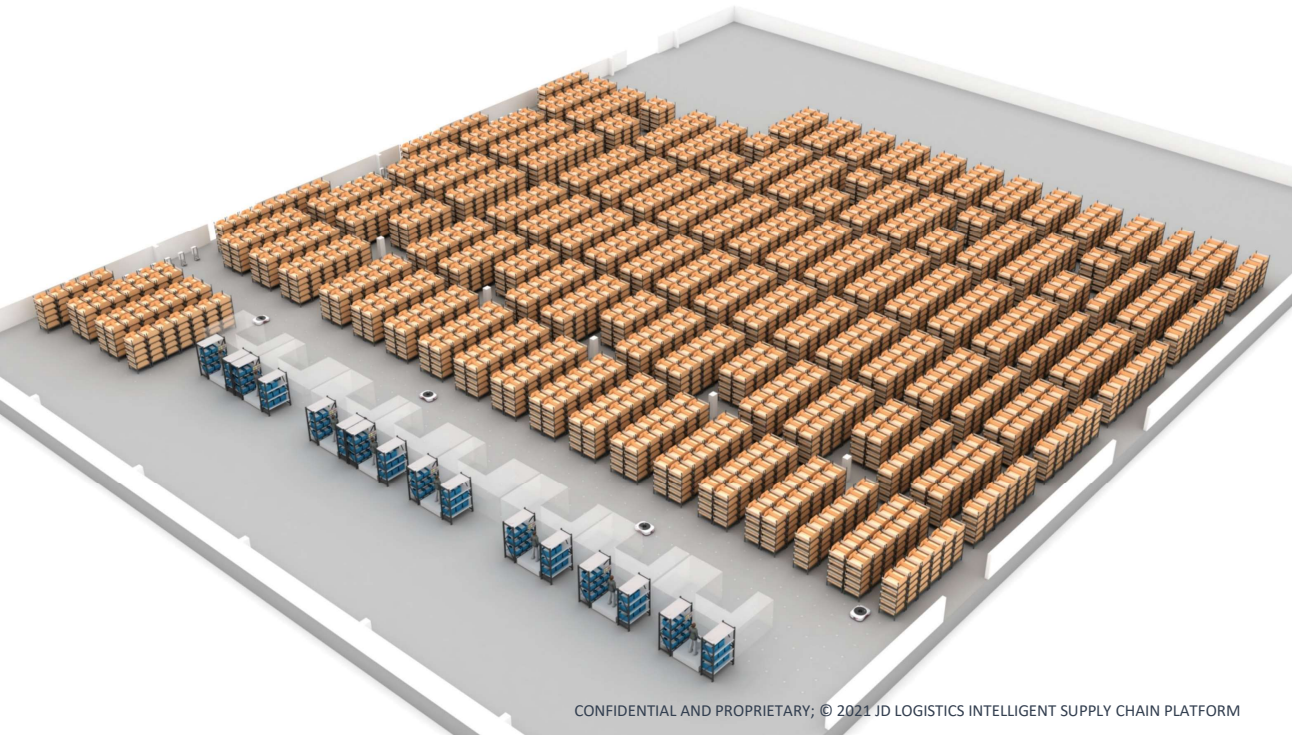
## PERFORMANCE

- Picking 800 pcs/h; peak 1200 pcs/h
- Put-away 800 pcs/h
- Through-put Improvement: 2.5x efficiency
- Storage Improvement: 3x capacity
- Payback Period:  $\leq$  5 years



# MAJOR EQUIPMENT - HANDLING AGV

CONSISTS OF HANDLING AGVS, MOVABLE SHELVES,  
PALLET STANDS, REBIN WALLS, WORKSTATIONS



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## SUITABLE FOR

MEDIUM AND SMALL PARCELS

## IMPLEMENTATION

E-COMMERCE, 3PL, CONSUMER GOODS, 3C,  
GARMENTS, PHARMACEUTICALS, ETC.

## SHORT CONSTRUCTION PERIOD

- Low requirements on warehouse conditions
- Can be built within 3~6 months

## HIGHLY COST EFFECTIVE

- Improve operation efficiency
- Save labor costs

## FLEXIBLE & EXPANDABLE

- Easy layout adjustment
- Expandable via adding more AGVs, shelves,  
workstations, etc.

# MAJOR EQUIPMENT - HANDLING AGV



Handling AGV: The "Goods-to-Person" picking solution can achieve the shelf-related unmanned handling in warehouses, eliminate personnel fatigued operations of long-distance walking and realize shelf-related self-handling tasks based on order destinations. It replaces the traditional manual picking mode, greatly improves human efficiency and accuracy, reduces work intensity and operating costs. It features high flexibility and a short ROI period.

## Product Features of AGV

- 1 Autonomous navigation technology**  
The navigation technology is combined with identification code and gyroscope to achieve high movement performance and millimeter-level positioning accuracy;
- 2 Flexible motion control**  
Double-wheel differential drive running supports motion control such as forward, backward, and synchronous rotation;
- 3 Wireless switch technology**  
The LoRa communication technology is adopted to realize "One-Key Shutdown" and "One-Key Startup" for all equipment, thus facilitating simultaneous operation of the equipment;
- 4 Multiple safety protections**  
Front obstacle avoidance sensors, safety bumper, and the safety perception communication module for human and vehicles guarantee operating safety;
- 5 Smart energy management**  
The configurable electrical threshold control is supported. Charging strategies can be flexibly configured according to the business scenario requirements;
- 6 Battery safety technology**  
Lithium titanate core (LTO) technology, 10,000 (10 years) cycle life and real-time monitoring of overcurrent, overvoltage, over-temperature, etc.;
- 7 Quick charging technology**  
Quick charging at up to 50 A is supported and completed in 30min. A full-load endurance of 10h is available;
- 8 Equipment status indication**  
Indications are given through the three-color indicator regarding the battery level, equipment status and other aspects;
- 9 Auto-vehicle following technology**  
In the piece picking mode, can provide the stable auto-vehicle following technology and improve the efficiency of vehicle transport at a single workstation;
- 10 Wireless network communication**  
Wi-Fi, 5G, LoRa and other network communication and wireless roaming are supported. The operation accessibility is ensured within the network coverage area;
- 11 Operation at low temperatures**  
Automatic operation and charging within the range of  $-20^{\circ}\text{C}$  -  $50^{\circ}\text{C}$  are supported for the operations at low temperatures (this is not applicable to temperature alternation);
- 12 Stand-alone remote control**  
A wireless remote control handle is available upon request to realize manual remote operation control and application in the stand-alone mode without system deployment;





# MAJOR EQUIPMENT - HANDLING AGV - SPECIFICATION



MODEL	D600-PL1	D600-TL1	
<b>Basic Parameters</b>	External Dimensions L*W*H	952x700x255 mm	952x700x255 mm
	Rotation Diameter	Φ 960 mm	Φ 960 mm
	Lifting Height	60 mm	60 mm
	Self-Weight	145 kg	145 kg
<b>Operation Parameters</b>	Rated Load	600 kg	600 kg
	Navigation	Data Matrix Code + Inertial Navigation	Data Matrix Code + Inertial Navigation
	Lifting Type	Electric Lift	Electric Lift
	Rated Operation Speed (Empty)	2 m/s	2 m/s
	Rated Operation Speed (Full-load)	1.5 m/s	1.5 m/s
	Rated Acceleration (Empty)	2 m/s <sup>2</sup>	2 m/s <sup>2</sup>
	Rated Acceleration (Full-load)	1 m/s <sup>2</sup>	1 m/s <sup>2</sup>
	Guiding Accuracy	± 10 mm	± 10 mm
	Stop Angle Accuracy	± 1°	± 1°
	Stop Position Accuracy	± 10 mm	± 10 mm
<b>Safety Protection</b>	Safety Obstacle Avoidance	Front laser sensor	Front laser sensor
	Bumper Detection	Front bumper detector	Front bumper detector
	Kill Switch	Front / rear kill switches	Front / rear kill switches
	Status Indication	Multi-color indicator lights	Multi-color indicator lights
	Safety Awareness Module	Safety monitoring of staff and vehicles; pausing AGV operation when staff with the module enters detection zone.	Safety monitoring of staff and vehicles; pausing AGV operation when staff with the module enters detection zone.
	Hardware Control	Buttons for lifting, lowering, reset, one-click I/O, etc.; with access keys	Buttons for lifting, lowering, reset, one-click I/O, etc.; with access keys
<b>* Battery</b>	Battery Type	Lithium Iron Phosphate Battery (LFP)	Lithium-titanium-oxide Battery (LTO)
	Charging Voltage	58 V	53 V
	Charging Current	≤ 18 A	≤ 50 A
	Battery Capacity	23 Ah	20 Ah
	Electric Quantity	1.177 kwh	0.966 kwh
	Battery Cycle (100% DOD)	2000 times	1000 times (10years)
	Rated Duration	10 hours	9 hours
	Charging Time (0→100 %)	≤1.5 h	≤0.5 h
	Working Temperature	0-40 °C	-10-40 °C
	<b>Charging Equipment</b>	Charging Post	CS-C30 (30 A)

MODEL	D1000-PL1	D1000-TL1(CE)	
<b>Basic Parameters</b>	External Dimensions L*W*H	952x700x280 mm	952x700x280 mm
	Rotation Diameter	Φ 960 mm	Φ 960 mm
	Lifting Height	60 mm	60 mm
	Self-Weight	155 kg	155 kg
<b>Operation Parameters</b>	Rated Load	1000 kg	1000 kg
	Navigation	Data Matrix Code + Inertial Navigation	Data Matrix Code + Inertial Navigation
	Lifting Type	Electric Lift	Electric Lift
	Rated Operation Speed (Empty)	2 m/s	2 m/s
	Rated Operation Speed (Full-load)	1 m/s	1 m/s
	Rated Acceleration (Empty)	2 m/s <sup>2</sup>	2 m/s <sup>2</sup>
	Rated Acceleration (Full-load)	0.3 - 0.5 m/s <sup>2</sup>	0.3 - 0.5 m/s <sup>2</sup>
	Guiding Accuracy	± 10 mm	± 10 mm
	Stop Angle Accuracy	± 1 degree	± 1 degree
	Stop Position Accuracy	± 10 mm	± 10 mm
<b>Safety Protection</b>	Safety Obstacle Avoidance	Front laser sensor	Front laser sensor
	Bumper Detection	Front bumper detector	Front bumper detector
	Kill Switch	Front / rear kill switches	Front / rear kill switches
	Status Indication	Multi-color indicator lights	Multi-color indicator lights
	Safety Awareness Module	Safety monitoring of staff and vehicles; pausing AGV operation when staff with the module enters detection zone.	Safety monitoring of staff and vehicles; pausing AGV operation when staff with the module enters detection zone.
	Hardware Control	Buttons for lifting, lowering, reset, one-click I/O, etc.; with access keys	Buttons for lifting, lowering, reset, one-click I/O, etc.; with access keys
<b>* Battery</b>	Battery Type	Lithium Iron Phosphate Battery (LFP)	Lithium-titanium-oxide Battery (LTO)
	Charging Voltage	58 V	53 V
	Charging Current	≤ 18 A	≤ 50 A
	Battery Capacity	23 Ah	20 Ah
	Electric Quantity	1.177 kwh	0.966 kwh
	Battery Cycle (100% DOD)	2000 times	1000 times (10years)
	Rated Duration	7 hours	6 hours
	Charging Time (0→100 %)	≤1.5 h	≤0.5 h
	Working Temperature	0-40 °C	-10-40 °C
	<b>Charging Equipment</b>	Charging Post	CS-C30 (30 A)

Remarks:

[1] \*\*\* is the main point of difference in the product; [2] Endurance is the running time under rated load conditions; [3] D1000-TL1(w) is equipped with a load cell module; [4] The whole system supports 5G technology, the AGV has passed the EMC, RED, and MD certifications, with a maximum of 5000H MTBF, and the battery has passed the CE, UN38.3, and MSDS certifications.

# CASE SHARING - NANNING FDC



## OVERVIEW

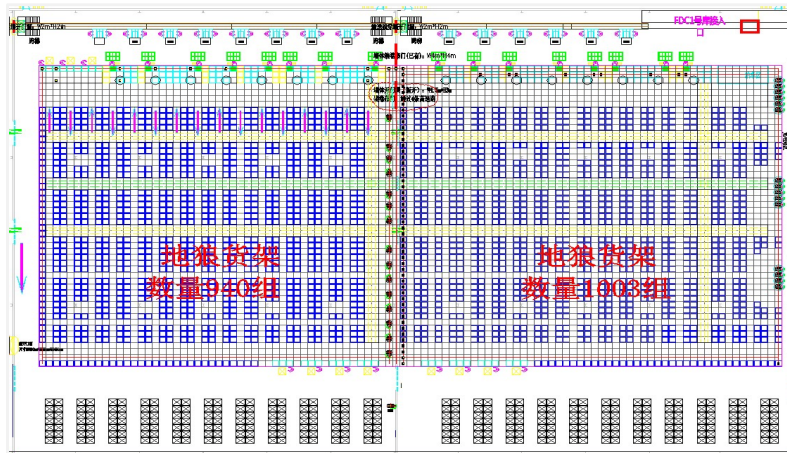
- All-category; 5,400 sqm; 2-phase construction
- Resolved Issues: low human efficiency, recruiting difficulty, long picking route, lack of picking sides with large quantity of SKUs, etc.

## CONFIGURATION

- 170 Handing AGVs; 2,000 Shelves; 2.5 months construction period
- 16 Picking + 8 Put-away Workstations
- Regular (Peak) Season Eff.: 25K (60K) orders; 50K (140K) pcs
- Regular (Peak) Season Storage: 700K (1M) pcs

## PERFORMANCE

- Picking 400 pcs/h; peak 800 pcs/h
- Put-away 800 pcs/h
- Through-put Improvement; 2x efficiency
- Average Cost per Order: Reduced 20%
- Payback Period: ≤ 2 years



# OVERSEAS CASE SHARING - FLEXIBLE UPPER FORMATION



## OVERVIEW

- All-category; 5,400 sqm; 2-phase construction
- Resolved Issues: low human efficiency, recruiting difficulty, long picking route, lack of picking sides with large quantity of SKUs, etc.



## CONFIGURATION

- 170 Handing AGVs; 2,000 Shelves; 2.5 months construction period
- 16 Picking + 8 Put-away Workstations
- Regular (Peak) Season Eff.: 25K (60K) orders; 50K (140K) pcs
- Regular (Peak) Season Storage: 700K (1M) pcs



# REFERENCE VIDEO - HANDLING AGV





# MAJOR EQUIPMENT - AUTO REBIN WALL

CONSISTS OF PARCEL FEEDING STATION, REBIN WALL, SORTING SHUTTLE, CHUTES



## SUITABLE FOR

MEDIUM AND SMALL PARCELS

## IMPLEMENTATION

E-COMMERCE, 3PL, CONSUMER GOODS, 3C, GARMENTS, PHARMACEUTICALS, ETC.

## SHORT CONSTRUCTION PERIOD

- Low requirements on warehouse conditions
- Can be built within 1.5~2 month

## HIGHLY COST EFFECTIVE

- Improve sorting efficiency
- Save labor costs

## FLEXIBLE & EXPANDABLE

- Easy layout adjustment
- Module design for flexible expansion



# MAJOR EQUIPMENT - AUTO REBIN WALL



APPERANCE



Parcel Feeding and Scanner



Auto Rebin

## Rebin Wall

Module design for flexible expansion, adjustment of position and length for easy on-site installation

## Sorting Shuttle

Minimalistic shuttle; self weight less than 10kg; the number of shuttle can be configured according to operation requirement

## Parcel Feeding Station

Four- section belt; contains deliver section, gapping section, scanning section, and feeding section

## Scanner

One-side and five-side scanners available as options

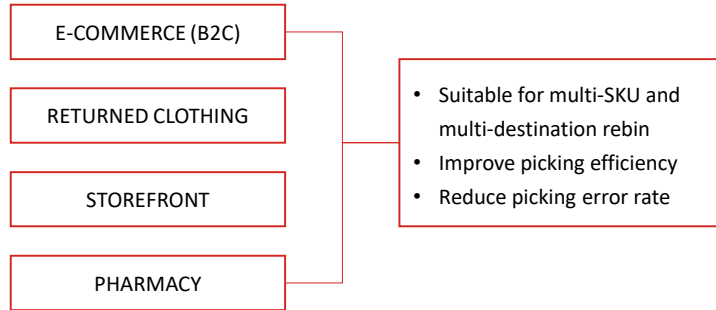
## Chute

Adapts RFID to realize automatic binding and unbinding of totes, saving time on tote swapping

# MAJOR EQUIPMENT - AUTO REBIN WALL



## APPLICATION SCENARIO



## APPLICATION CASE - FRESH SUPERMARKET



### Project Overview

- Project footprint: around 25 sqm. for 52 chutes (compact design)
- Picking efficiency: 250 orders / h

### Project Performance

- Operation cost reduces 40%
- Picking efficiency improves 200%
- Fast project delivery within 30 days

# LOMIR - LOGISTICS BUSINESS INTELLIGENCE



SUPPLY CHAIN SOLUTION  
INTERNATIONAL BUSINESS



- Advanced connectivity and controllability
- Interaction and correlation between real situations and digital models
- Ever-evolving by harnessing AI algorithms
- A “mirrored” digital world reflecting / predicting the physical world
- Higher transparency; higher reliability ; higher efficiency

DIGITALIZATION



DIGITAL TWINS



DIGITAL NATIVE

# SOLUTION POSITIONING



## PAIN POINTS

Low operation and collaboration efficiency

Human / Vehicle / Cargo / Station

Inconsistent information flow

Information / Cargo / Capital

Regulatory blind spots on the road

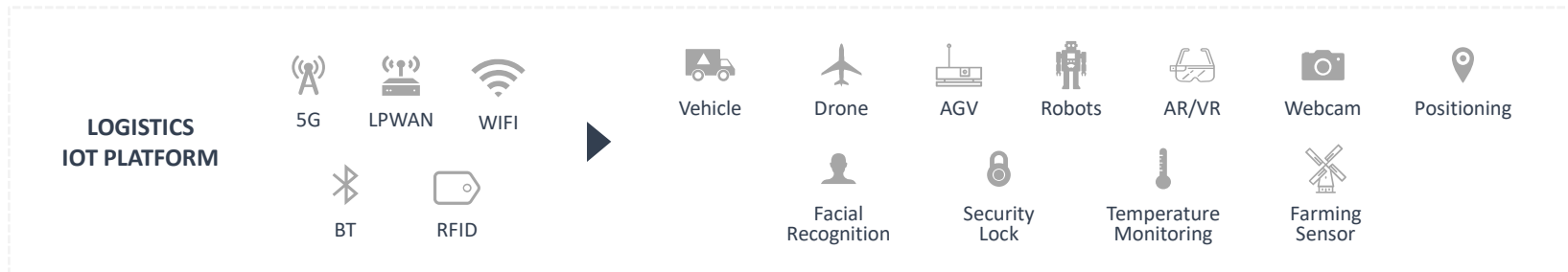
Vehicle / Cargo / Road

## LOMIR SMART STATION

## LOMIR DIGITAL FLEET

## LOMIR VISION

## LOMIR SMART IDENTITY



# LOMIR STATION



**PARKING TIME**  
40% ↓

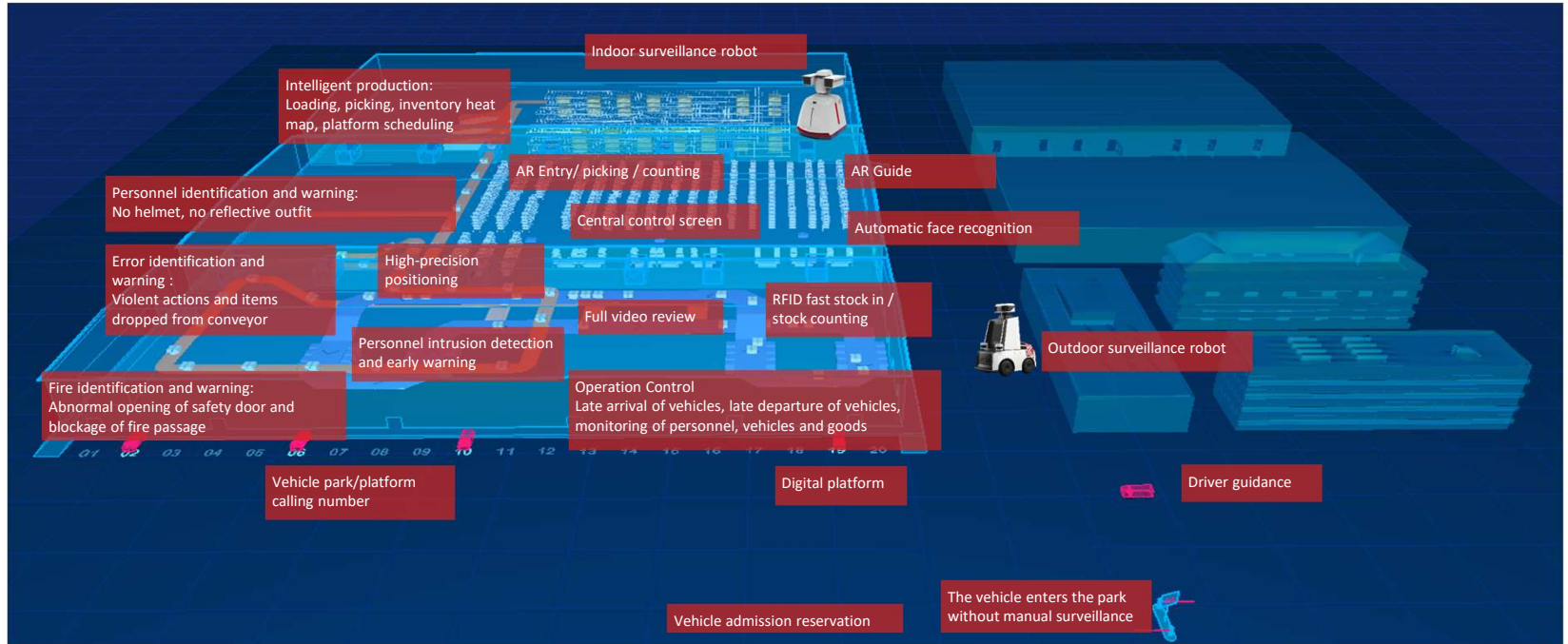
**TRAFFIC EFFICIENCY**  
60% ↑

**PLATFORM UTILIZATION**  
25% ↑

**DISPATCH EFFICIENCY**  
50% ↑

**EXCEPTION HANDLING**  
98% ↑

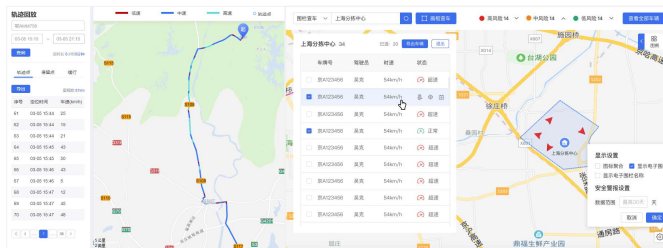
**AUTOMATIC ATTENDANCE**  
100% ↑





## VEHICLE-MOUNTED HARDWARE

- Vehicle tracker: vehicle real-time positioning and report
- Surveillance suit: Real-time analysis of driver's bad behavior and safety of the road ahead, and immediate correction of risks



## VEHICLE DATA PLATFORM

- Vehicle trajectory data
- Backtracking of vehicle driving data



## SAFETY RISK CONTROL

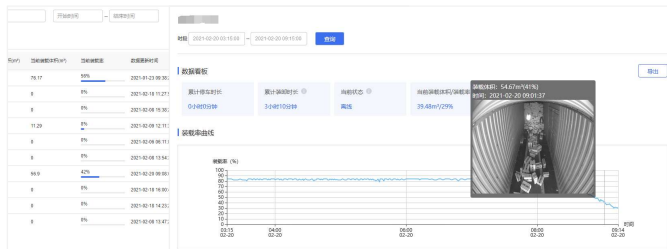
- Automatic security risk reminder
- Fleet operation risk report: monthly/quarterly



## CUSTOMIZATION

- System integration
- Data visualization





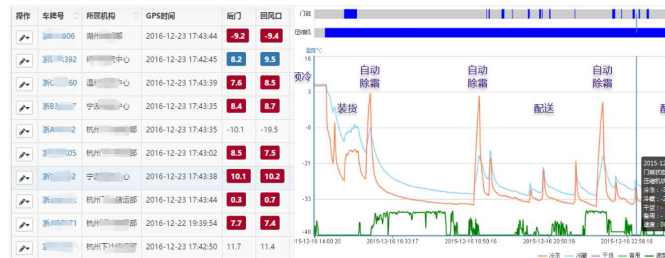
## VEHICLE LOAD CAPACITY

- Real-time measurement of load capacity through infrared, laser, vision algorithms and other means



## PARK POSITIONING

- Perform high-precision positioning and navigation in a park



## TEMPERATURE AND HUMIDITY MONITORING

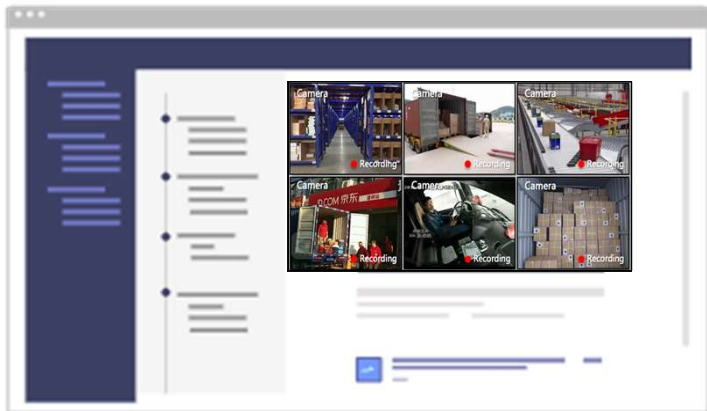
- Real-time monitoring of the cabin temperature and humidity of vehicles in transit, and report exception information



## DATA SYNCHRONIZATION

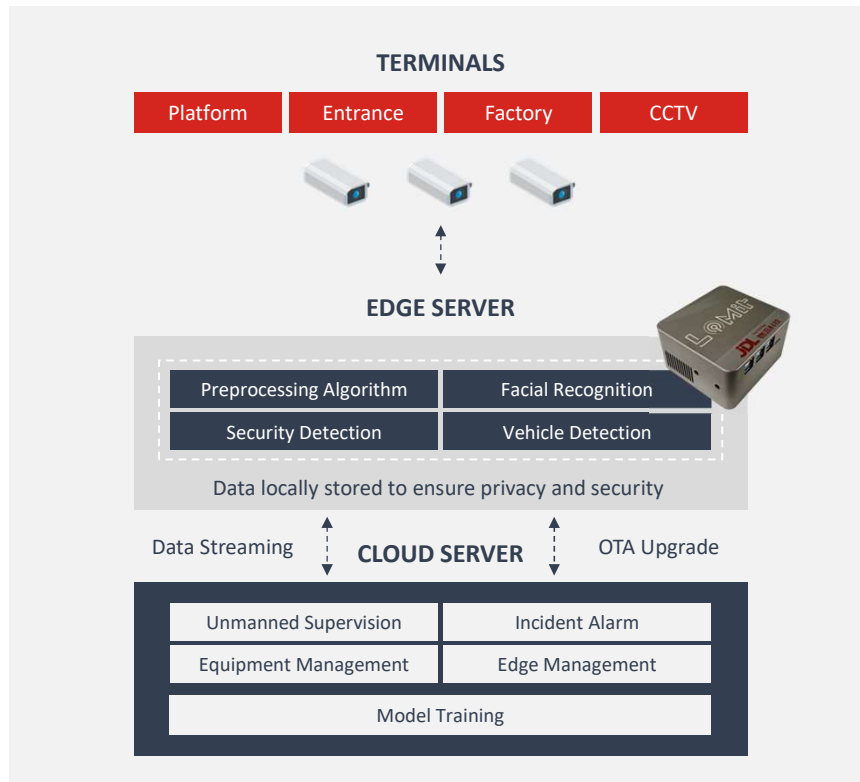
- Real-time sharing of in-transit data to the park system
- In/out management and prediction of the vehicle arrivals

# LOMIR VISION - INTELLIGENT VIDEO ANALYSIS



## VIDEO RETROSPECTIVE SYSTEM

- Real-time recording
- Cloud storage: backtracking at any time, flexible setting of the storage time
- Recognition of abnormal and irregular events, trigger alarm and human intervention



# CASE SHARING #1 – HSU FU CHI PROJECT

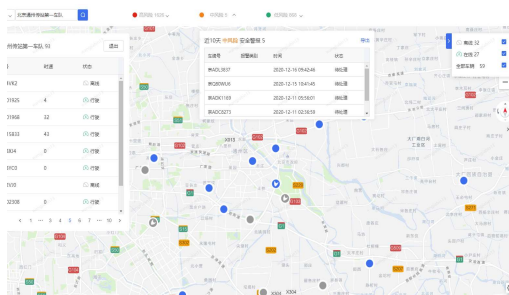


## SMART STATION



**15** hours for original delivery  
**9** hours after optimization

## DIGITAL FLEET



Original scheduling process **8** hours  
**2.6** hours after optimization

## PAPER-LESS FORM

发货清单

发货方: 东莞徐记食品有限公司 工厂: 7399 承运商: 耀川 车牌号:  
单号: CS1607428498973756 运单号: 838116850, 838206844, 838139287, 838263465, 838254178 柜号:  
收货方: 惠州分库 收货地点: 广东省惠州市惠城区白泥三路6号 封号:  
发货日期: 2020-12-09 要求到达日期: 2020-12-12 实际到达日期: 2020-12-09

物料	物料描述	批次	箱数	备注(收货异常)
12405946	徐福记沙琪玛松软蛋黄味袋装#12x470gX1 CN	20201202A	2	
12406732	徐福记沙琪玛香酥芝麻袋装#20x311gX1 CN	20201204A	5	
12406738	徐福记沙琪玛松软蛋黄味袋装#20x311gX1 CN	20201203A	7	
12406865	徐福记沙琪玛蔓越莓酸口味袋装#20x220g CN	20201128D	1	
12415999	0000混合口味泡芙糖罐装#6x300g CN	20201203C	30	

Original **16** documents  
**7** abolished, **9** online after optimization

# CASE SHARING #2 – CHONGQING BULKY GOODS WAREHOUSE



BULKY GOODS STOCK-TAKING

**10x+** Efficiency Improvement  
**99.5%** Accuracy Improvement



PICKING

**20%** Efficiency Improvement



SPARE PARTS STOCK-TAKING

**150x+** Efficiency Improvement  
**99.9%** Accuracy Improvement



RE-CHECKING

**5x+** Efficiency Improvement  
**100%** Error Prevention



M&S PARCEL SORTING

**20x+** Efficiency Improvement  
**99.9%** Accuracy Improvement

## RFID APPLICATION



HANDHELD RFID STOCK-TAKING



FORKLIFT RFID STOCK-TAKING



DRONE RFID STOCK-TAKING

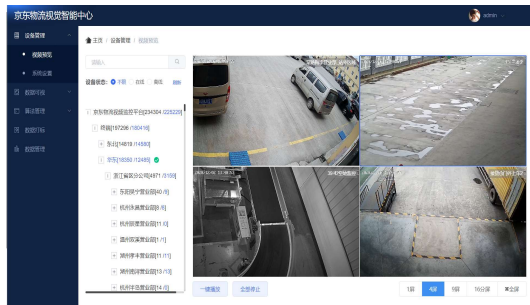


ROBOT RFID STOCK-TAKING



RFID PICKING & RE-CHECKING

# CASE SHARING #3 – JDL VISUAL INTELLIGENCE CENTER



**NATION-WIDE VIDEO  
CONVERGENCE CENTER**



**PRODUCT MAINTENANCE FULL  
VISUAL TRACEABILITY**



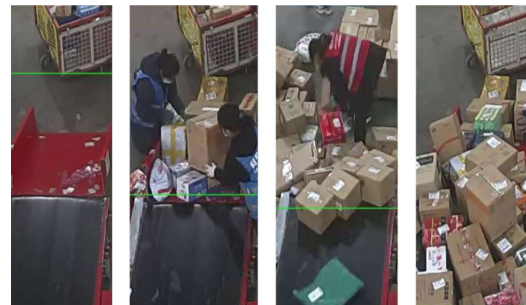
**VIOLENT OPERATION RECOGNITION**



**NATION-WIDE VIDEO  
CONVERGENCE CENTER**



**DROPPED ITEM IDENTIFICATION**



**SORTER CONGESTION RECOGNITION &  
EARLY WARNING**



# CLIENT PORTFOLIO



SUPPLY CHAIN SOLUTION  
INTERNATIONAL BUSINESS





# VERSATILE & DIVERSE INDUSTRY COMPATIBILITY



## AUTOMOBILE



## MACHINERY



## ELECTRONICS & APPLIANCE



## ENERGY & OTHERS



## RETAIL & MEDICAL



## FMCG



## AIRPORT



100+ END CUSTOMERS  
IN VARIOUS INDUSTRIES



THANKS FOR YOUR TIME



SUPPLY CHAIN SOLUTION  
INTERNATIONAL BUSINESS