

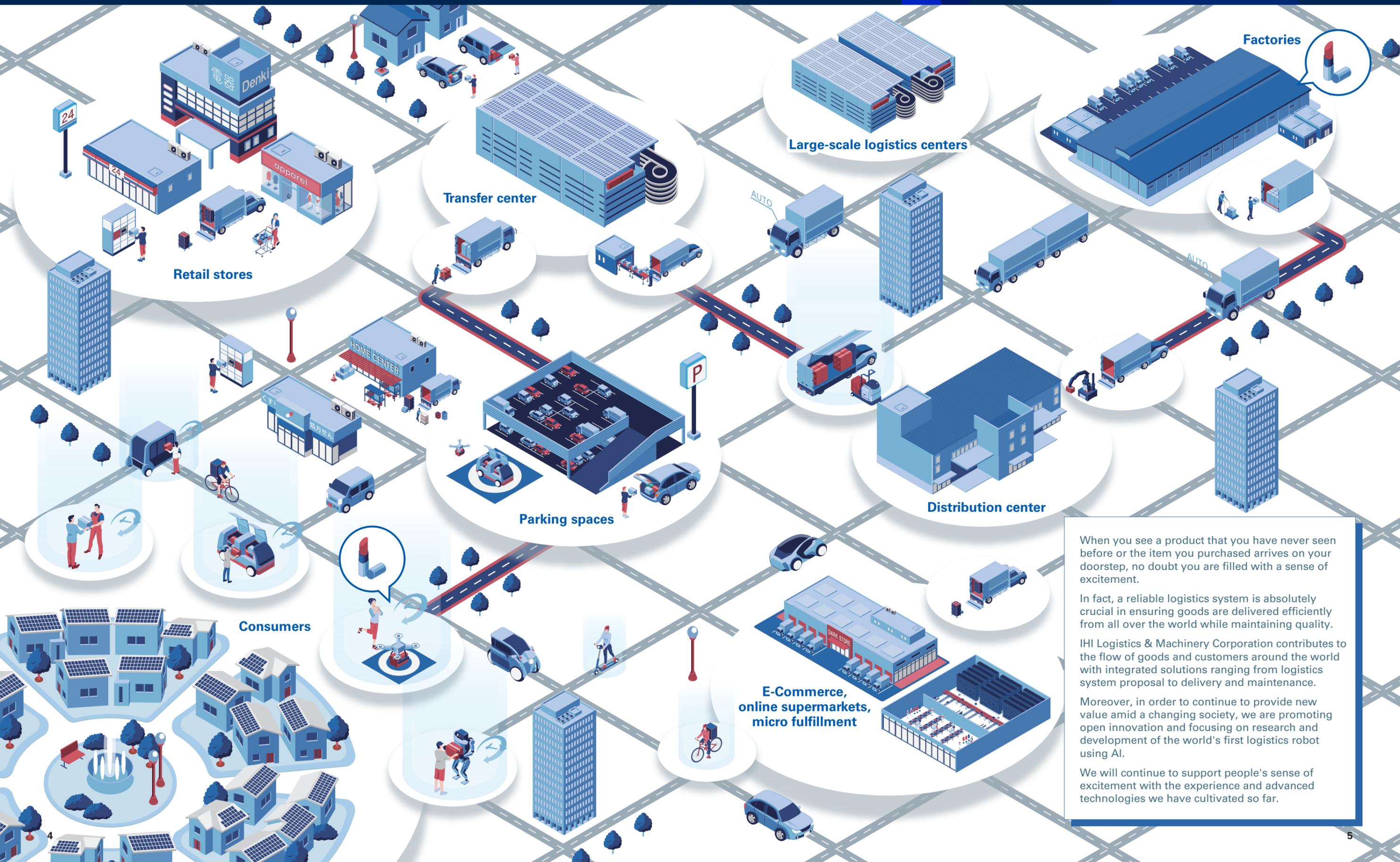
# Create Value, Maximize Value.

IHI Logistics & Machinery Corporation



# Sustainable society

Toward the Realization of a Prosperous and Sustainable Society



When you see a product that you have never seen before or the item you purchased arrives on your doorstep, no doubt you are filled with a sense of excitement.

In fact, a reliable logistics system is absolutely crucial in ensuring goods are delivered efficiently from all over the world while maintaining quality.

IHI Logistics & Machinery Corporation contributes to the flow of goods and customers around the world with integrated solutions ranging from logistics system proposal to delivery and maintenance.

Moreover, in order to continue to provide new value amid a changing society, we are promoting open innovation and focusing on research and development of the world's first logistics robot using AI.

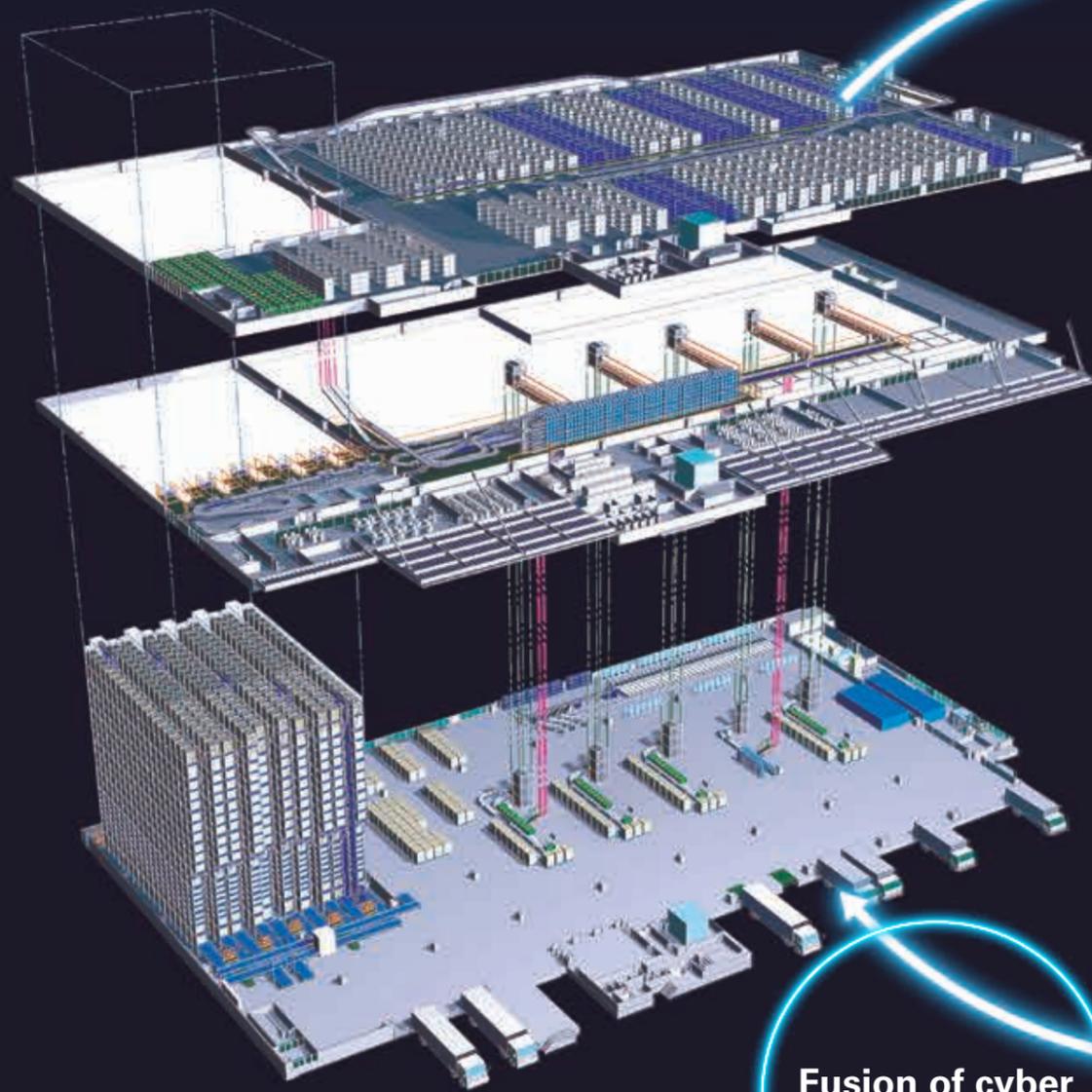
We will continue to support people's sense of excitement with the experience and advanced technologies we have cultivated so far.

# Create Value, Maximize Value

Creating Value Together with Customers

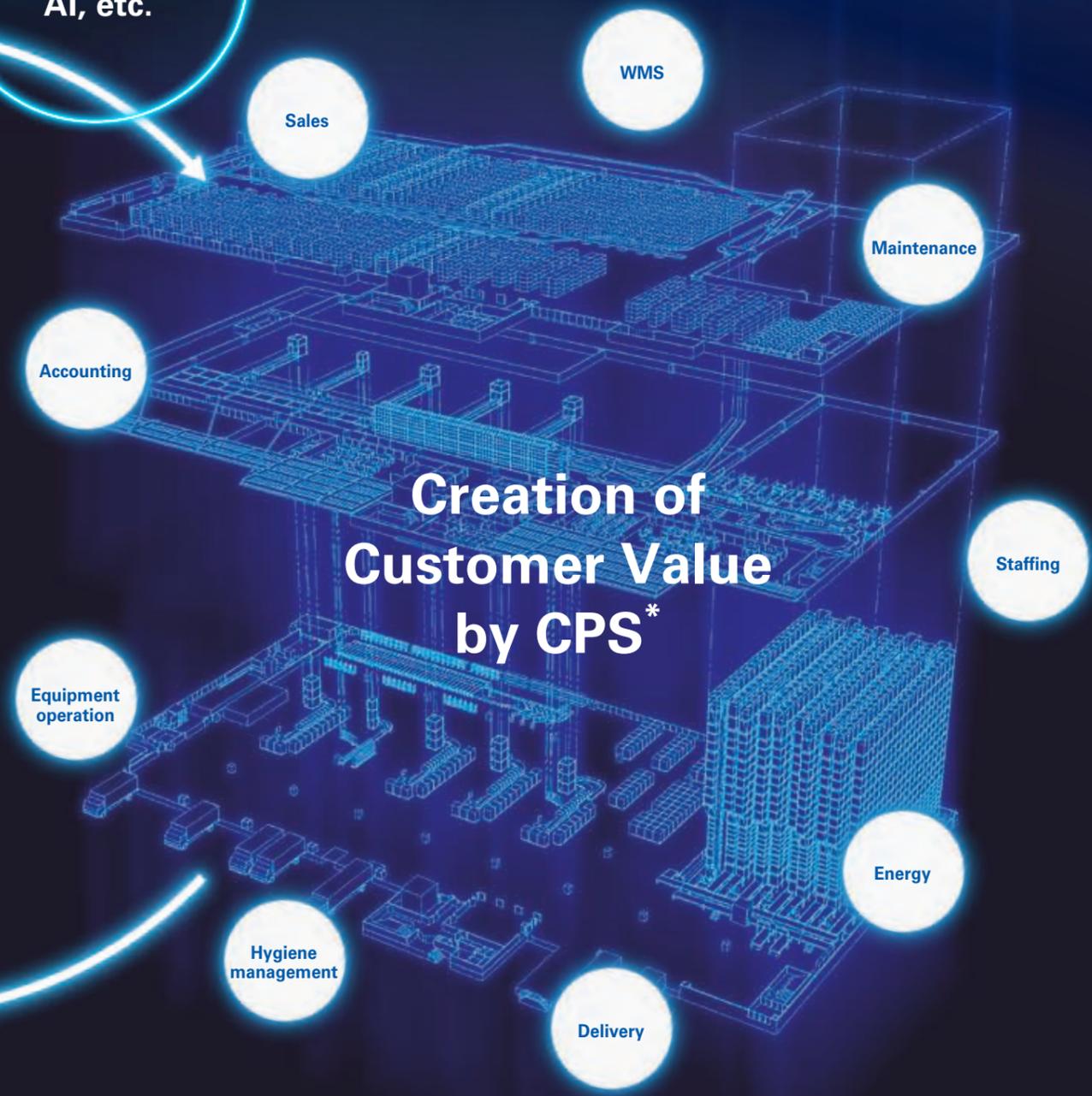
We provide optimal solutions for logistics and manufacturing sites that continue to change day by day.

We conduct digital simulations combining know-how backed by experience and various data from the supply chain. We will continuously provide optimal solutions throughout our customers' lifecycles, such as improving productivity at logistics and manufacturing sites, optimizing logistics flow, and predicting failures.



Fusion of cyber and physical

IoT,  
Big Data,  
AI, etc.



\*CPS (Cyber Physical System)  
CPS is an approach that creates value by collecting various data from the physical world, utilizing digital technology to analyze it in the cyber world, then feeding such data back into the physical world as easy-to-use information and knowledge.

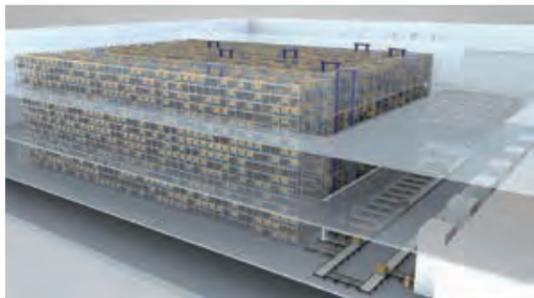
# Solution

## Solution Examples

### Offering Total Solutions by Leveraging Know-how Backed by over 50 Years of Experience

As a comprehensive logistics manufacturer, IHI Logistics and Machinery Corporation leverages its know-how backed by over 50 years of experience to be a one-stop provider of total solutions for our customers, covering everything from logistics equipment to information systems and after-service. The issues of labor shortages and hard labor remain prevalent and, in order to meet rapidly intensifying demands for streamlined logistics operations amid a changing society, IHI Logistics and Machinery Corporation enables full automation from receipt to dispatch of goods, and helps to create new values.

Automated Storage Retrieval System (AS/RS)



Backside-picking system



AMR



Mobile shelving robots



Skypod



Piece picking system



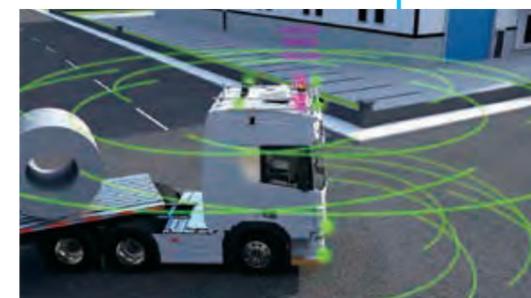
Shuttle & Server



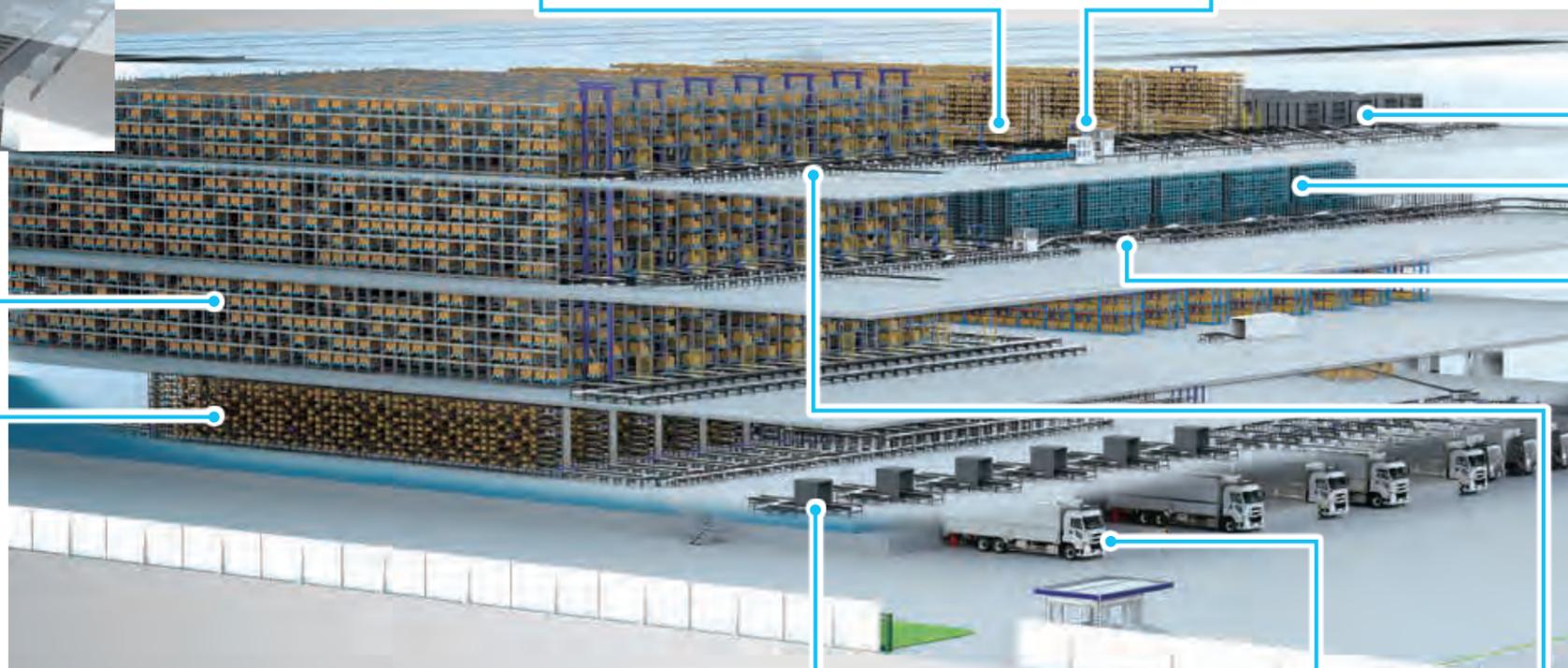
Automatic inspection system



On-site transportation system



Palletizing & depalletizing system



### Development

Product and service development

At Motomiya Factory, we develop next-generation products and services, and manufacture with the latest technologies and enriched facilities.

Realization of safe and secure social infrastructure and next-generation logistics platform



Realization of products and solutions with higher added value



Technologies that support system development



- System engineering
- Mechanical engineering
- Electrical and electronic engineering
- Information processing and control

Realization of a low-carbon society



Fundamental technologies supporting manufacturing



- Materials
- Forming materials
- Composite materials
- Processing
- Welded joints
- Inspection and measurement
- Painting and surface treatment

Enriched manufacturing facilities



- Machining centers
- Large plano miller
- Large composite planer
- Large horizontal boring machine
- Other manufacturing facilities

### Open Innovation

Creation of new businesses

#### IHI Yokohama Logi-lab

IHI Logistics and Machinery opened "IHI Yokohama Logi-lab" on June 2022. Customers can know and understand IHI's logistics technology innovation through actual equipment. In this showroom, customer can see "Skypod" which is goods to person system, palletizing/depalletizing system and AI picking robot. Through the tour of demo system and discussion, IHI supports to solve customer's challenges of logistics.



#### IHI Group Yokohama Laboratory i-Base

Established Ignition Base (commonly known as i-Base) as a space to co-create new business ideas with customers and bring them to life with speed (2019). We will create new value together with our customers at high speed.



#### Fundamental Technologies Supporting Manufacturing

Established in the Yokohama Office as a base for the IHI Group's open innovation (2014). We are working to create collaboration partners by providing a "collaboration area" where technical and information exchanges with customers take place, and an "inspiration area" where participants gain awareness through interactive dialogue starting from exhibits of IHI's technologies and products.



# Open innovation

## Examples of open innovation

The world is changing at a dizzying pace. In order to respond to the speed and magnitude of these changes and provide value to customers, we are promoting open innovation not only within the IHI Group, but also in cooperation with external parties.

### Development of an automatic expiration date reading system

#### Development background

In logistics warehouses, inspection work for the expiration date is carried out by manual input in order to appropriately manage the inventory of goods that are received and shipped, but securing personnel has become an issue due to a shrinking workforce. Furthermore, in the field of food distribution, thorough inventory management of food products is required. In order to solve these problems, IHI Group has been conducting R&D to instantly and automatically recognize the expiration date printed on cases in collaboration with Neurala, a U.S. startup company that develops technology centered on image recognition using AI.



#### Product overview

This system detects the shelf life of various printing patterns by taking photographs of the side of cases to be conveyed by the conveyor and utilizing AI-based character recognition technology. By utilizing this system, it is possible to greatly improve upon the efficiency and labor-saving of inspection work at the time of receipt and shipment, which has been performed manually, and to improve inventory management quality by reducing erroneous shipments due to date input errors and disposal of expired products.



# Products introduction

## Products Line Up

### Logistics & Factory Automation-related Products

We can improve the efficiency of various operations at logistics and manufacturing sites by providing a wide product lineup that realize automation and labor-saving.

#### Storage systems

IHI has pallet/case type Automated Storage Retrieval System (AS/RS). Our AS/RS can handle from small to large items. We contribute to labor-saving and space-saving in warehouses and factories, and have a wealth of experience in various industries such as dangerous goods storage, chilled and frozen goods storage, and vehicle storage.



Automated Storage Retrieval System (Frozen type)

#### Sorting systems

In recent years, as the e-commerce market has developed rapidly, labor shortages have become a serious problem in the logistics industry, creating a need to save labor and increase the capacity of sorting work. IHI Logistics and Machinery Corporation's Shuttle & Server® combines high storage capacity with high loading/unloading capability, enabling temporary storage of goods and automation of fast and accurate sorting tasks.



Shuttle & Server®

#### GTP (Goods to person) systems

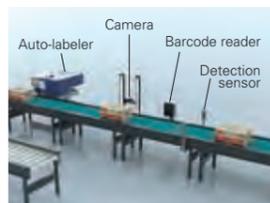
Skypod is a 'GTP' (goods to person) system which transports items straight to pickers. It is a next-generation picking system which reduces the walking distance of the human picker. And Skypod realizes over 400 orderlines/hour as a throughput. This technology enables a shift from individualized work relying on seasoned workers, to simple picking work that anyone can do.



3D picking system - Skypod

#### Advanced Inbound/Outbound system

In addition to registering expiration date information scanned by AI in the warehouse management system, this system enables centralized management of all product information by linking with barcode information and measurement information such as size and weight. It significantly increases the efficiency and reduces the burden of manual inspection work upon receipt/dispatch of products at the same time as reducing mistaken dispatch and disposal of expired products due to date entry errors, thus improving warehouse management quality.



#### Transport systems

Rail Guided Vehicle (RGV) and Automated Guided Vehicle (AGV) realize automatic transportation. By linking with an Automated Storage & Retrieval System (AS/RS), we achieve complete automation from storage to transportation. We handle a wide range of goods, such as rolled items, long items, heavy loads, and frozen goods. We have delivered to various industries such as the food, newspaper, and pharmaceutical industries.



Driverless forklift

#### Robotics

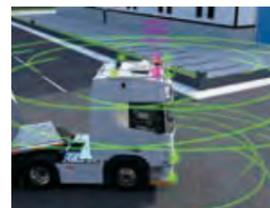
IHI Logistics and Machinery Corporation provides robots that automatically pick up individual pieces as well as robots that handle stacked cases and cardboard boxes. Conventionally, robots simply repeat the motions they are taught over and over, however by utilizing AI, our robots can pick pieces with the optimal trajectory and speed to suit the specific situation. This helps to streamline tasks, save on labor, and improve dispatch accuracy.



Piece picking system

#### Automatic transportation systems

At many manufacturing sites, the work sites for individual processes (e.g., receiving/dispatch/manufacturing) are far from one another and goods need to be transported around-the-clock by either trucks or semi-trailers. Customers can install this automatic transportation unit comprising sensors and actuators on their existing trucks and semi-trailers, enabling unmanned operation and automation of on-site transportation.



#### AS/RS (Automated Storage Retrieval System) sharing service

In February 2025, we will start "AS/RS" sharing service at a leased logistics facility in Yokohama. This will be a next-generation logistics service that enables multiple clients to share the facility and achieve flexibility to secure and operate the number of shelves in response to changes in the duration and volume of stored goods. Client will not need to install fixed facilities on their own and will reduce excess storage costs.



#### Electrode manufacturing unit for lithium-ion batteries (LiB)

This unit makes it possible to form electrodes through powder rolling, which is a key part of dry processing. In manufacturing of lithium-ion batteries (LiB), which are crucial to the constantly-advancing transition to electric cars, dry processing is a favorable alternative to the conventional wet processing used for electrode manufacturing as it requires significantly less energy consumption and installation space.



#### FA system for CFRP

We provide thermosetting and thermoplastic CFRP molding systems by fusing lamination and molding technologies and automation technologies. In the molding process of CFRP manufacturing, we provide mass-production molding systems that fuse lamination equipment and molding equipment with the automated mass production system we excel at. The shortening of the forming cycle enables a stable supply of CFRP parts.



Cutting robot

#### Thermoplastic CFRP prepreg production equipment

We are engaging in development of equipment capable of at high speed, continuous production of "prepreg," an intermediate base material for thermoplastic CFRP. By elucidating the impregnation mechanism of resin into carbon fiber and establishing heating and pressurization technologies, we are aiming to achieve mass production of high-quality thermoplastic prepreps. Our goal is to provide a stable supply of prepreps made in-house for various applications.



#### Logistics information service

A system for the analysis and optimization of logistic work processes. It is provided as a comprehensive platform to help improve logistics work, and consists of both a warehouse management system (WMS) and warehouse control system (WCS). This solution uses IHI's original optimization method to optimize warehouse layout and warehouse/delivery plans, thus increasing the efficiency of the whole supply chain.



### Environment-related Products

We offer solutions for infection control and the creation of comfortable environments in various spaces such as medical sites, public facilities, offices and factories.

#### Ozone water endoscope washing and disinfecting unit

This is unique washing and disinfection system uses ozone water. Therefore, compared to disinfection using conventional chemicals, it is friendly for both human and environment. Moreover, customer can save running cost. As the use of endoscopies increases, this product enables more reliable washing and disinfection in a short period of time, contributing to the management efficiency of hospitals and infection control.



#### Ozone air cleaner eZ-3000

The suction air cleaning function (droplet infection control) uses two HEPA filters to reliably remove viruses and bacteria suspended in the air. In addition, the ozone fumigation function (contact infection countermeasures) releases ozone gas into the room, which makes it possible to decompose and remove viruses and bacteria adhering to objects and walls.



#### Disinfectant water Re:CLEAR

Re:CLEAR is a disinfectant manufactured by utilizing the IHI ozone handling technology that we have cultivated over many years. It is active in the disinfection of a wide range of microorganisms from viruses to bacteria. Re:CLEAR is skin friendly, has no flammability, and does not leave a wipe mark. There are also features such as not fogging the acrylic sheet, so it can be used in various situations.



# Company Profile

## Company Profile

### Company Information

Company name : IHI Logistics & Machinery Corporation  
 Address : 3-1-1, Toyosu, Koto-ku, Tokyo, Japan  
 CEO : Motohiro Kawada  
 Founding : July 2, 1984  
 Capital : 1 billion yen  
 Shareholders : IHI Corporation  
 Affiliate : Central Conveyor Company Ltd.



### Quality Licenses

#### Construction license

We hold construction licenses for 23 different work types and can respond to all requests.

#### Permit number: Governor of Tokyo Permit (Special-3) No. 70624

- Civil engineering
- Building construction work
- Carpentry
- Plastering
- Scaffolding and cvil engineering
- Masonry
- Roofing
- Electrical engineering
- Piping
- Tile, brick and block construction
- Steel structure construction
- Steel reinforcement work
- Paving
- Dredging
- Sheet metal construction
- Glass glazing work
- Painting work
- Waterproofing
- Interior finishing work
- Machinery and equipment installation
- Heat insulation
- Joinery construction

#### Permit number: Governor of Tokyo Permit (General-3) No. 70624

- Fire protection facilities

#### ISO certified (9001:2015 / 45001:2018 / 13485:2016)

We acquired ISO9001, ISO13485, and ISO45001 certifications. By our quality management system and Industrial Safety and Health management system based on these standards, we provide state-of-the-art products and services to meet the customer trust.

#### ISO9001

Scope of registration: Development, sales, engineering, manufacturing, procurement, installation and after-maintenance service of equipment and related parts for logistics and manufacturing plant  
 Certification standard: ISO9001:2015 / JIS Q 9001:2015  
 Registration number: 0073  
 Registration date: April 24, 1995



#### ISO45001

Organization: Construction & Services Division  
 Certification standard: ISO45001:2018 / JIS Q 45001:2018  
 Registration number: H082  
 Registration date: December 13, 2018



#### ISO9001 (Okayama Office)

Scope of registration: Design, development, manufacture and maintenance of disinfection and deodorizing equipment  
 Certification standard: ISO9001:2015  
 Registration number: C2021-04824  
 Registration date: November 6, 2021



#### ISO13485 (Okayama Office)

Scope of registration: Design and manufacture of medical devices for endoscope disinfection  
 Certification standard: ISO 13485:2016  
 Registration number: ISO 13485-0066621  
 Registration date: January 1, 2012



### Network

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- 3 Algeria
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