

Industry Solution Transportation



CONTENT

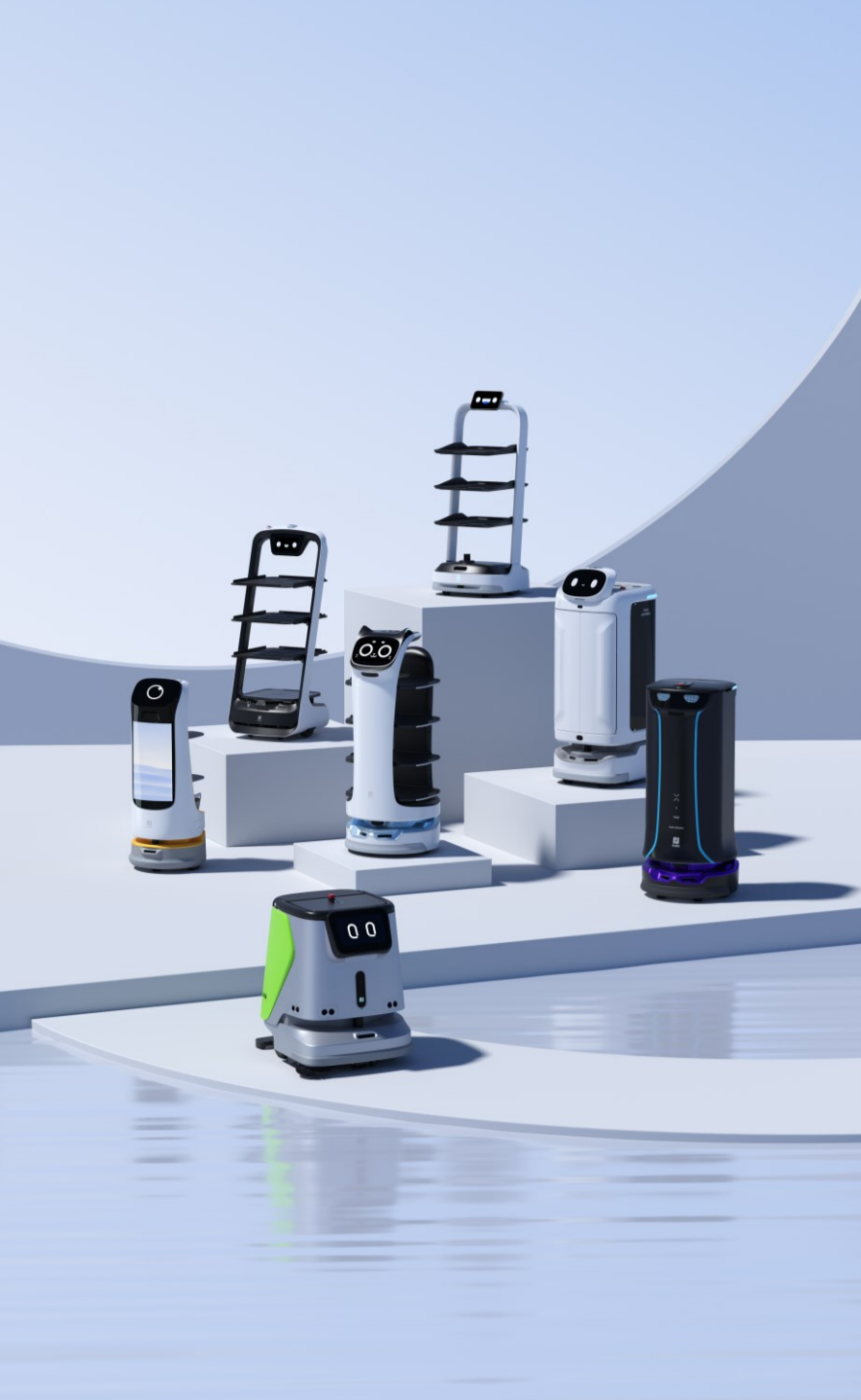
01 | Industry Overview

02 | Scenario Solutions

03 | Value

04 | Product Family Matrix

05 | PUDU Introduction



01

Industry Overview

Current Situation



Aviation operations

Takeoff and landing

Aircraft parking

Security check

Ground services



Airport business

Retail

Telecommunications

Food and beverage

Currency exchange

Advertising

Car rental

VIP reception

Airport hotels



Supporting services

Security services

Information consulting

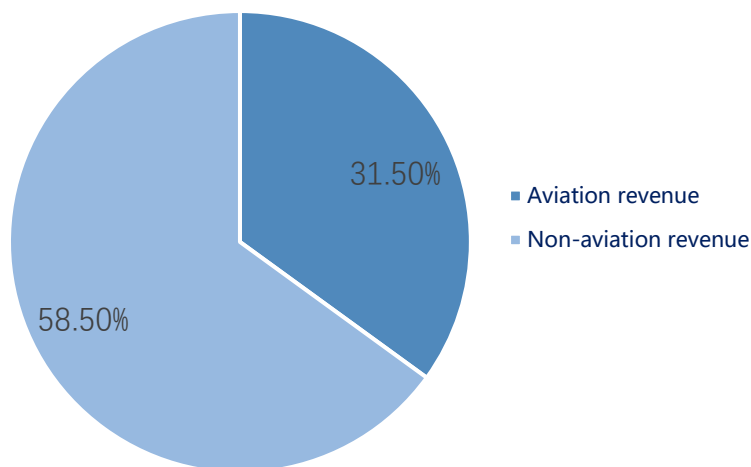
Medical support

Environmental hygiene

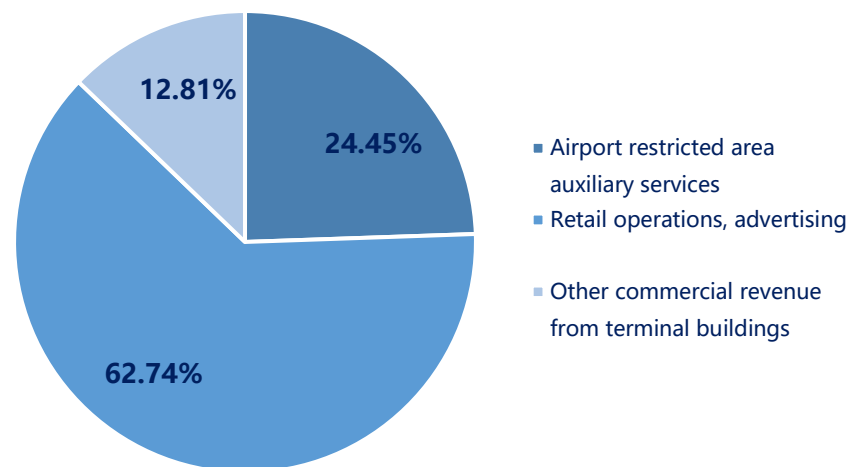
Current Situation

According to ACI, **non-aviation revenue** accounts for an average of **40%** of global airport revenue, with **airport businesses** contributing approximately **50%** of that

Hong Kong Airport's revenue data for 2019



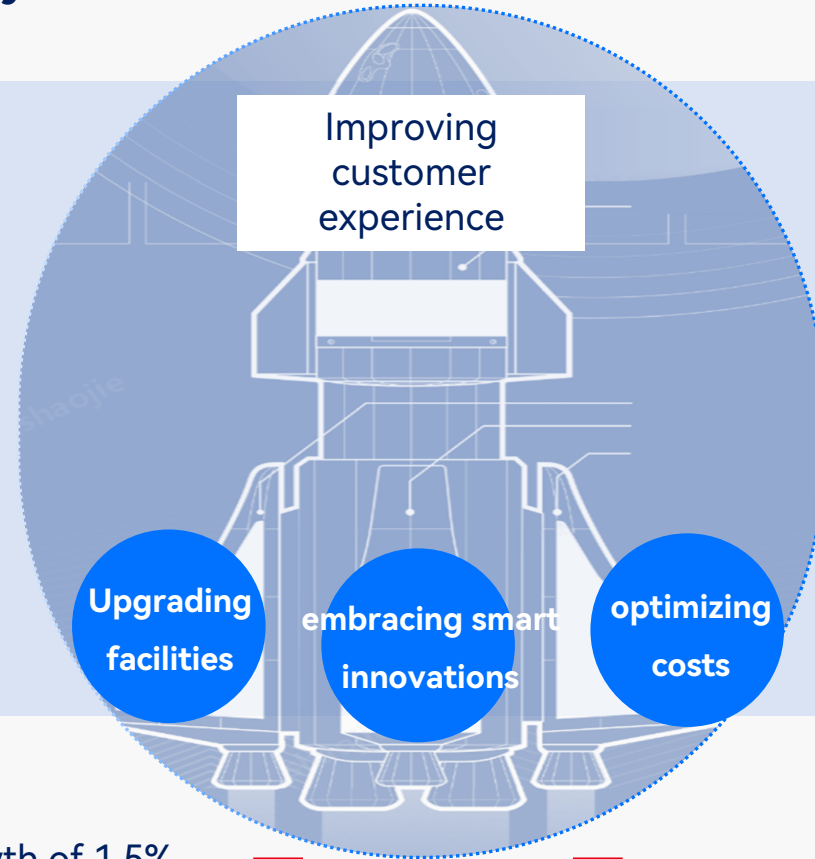
Non-aviation revenue



Hong Kong Airport's non-aviation business has consistently performed exceptionally well, with non-aviation revenue accounting for **over 60%** of the total. In 2019, the airport handled 75.1 million passengers, generating operating revenue of **HKD 19.47 billion**. Non-aviation business contributed **HKD 11.395 billion**, accounting for **58.5%** of the total revenue. Specifically, retail concession and advertising revenue amounted to **HKD 7.149 billion**, representing a significant share of **62.74%**.

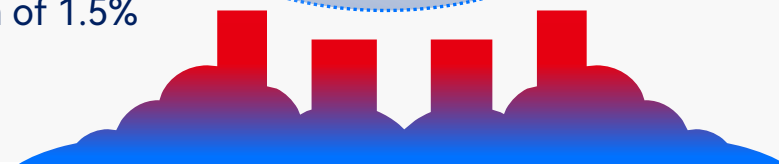
Airport Commercial Development Trends

Enhancing customer experience is the best way to increase non-aeronautical revenue



According to ACI data:

1% increase in global passenger satisfaction leads to an average growth of 1.5% in non-aeronautical revenue.



Airport Commercial Development Ecosystem

Technological Support



Third party APP



Intelligent upgrades in airport operations

Airport



Products
Solutions
Services

Enhanced services for brand merchants

Brand Enterprise



Smart marketing
Intelligent distribution
Smart cleaning
Smart epidemic prevention

Innovative improvements in consumer experience

passenger

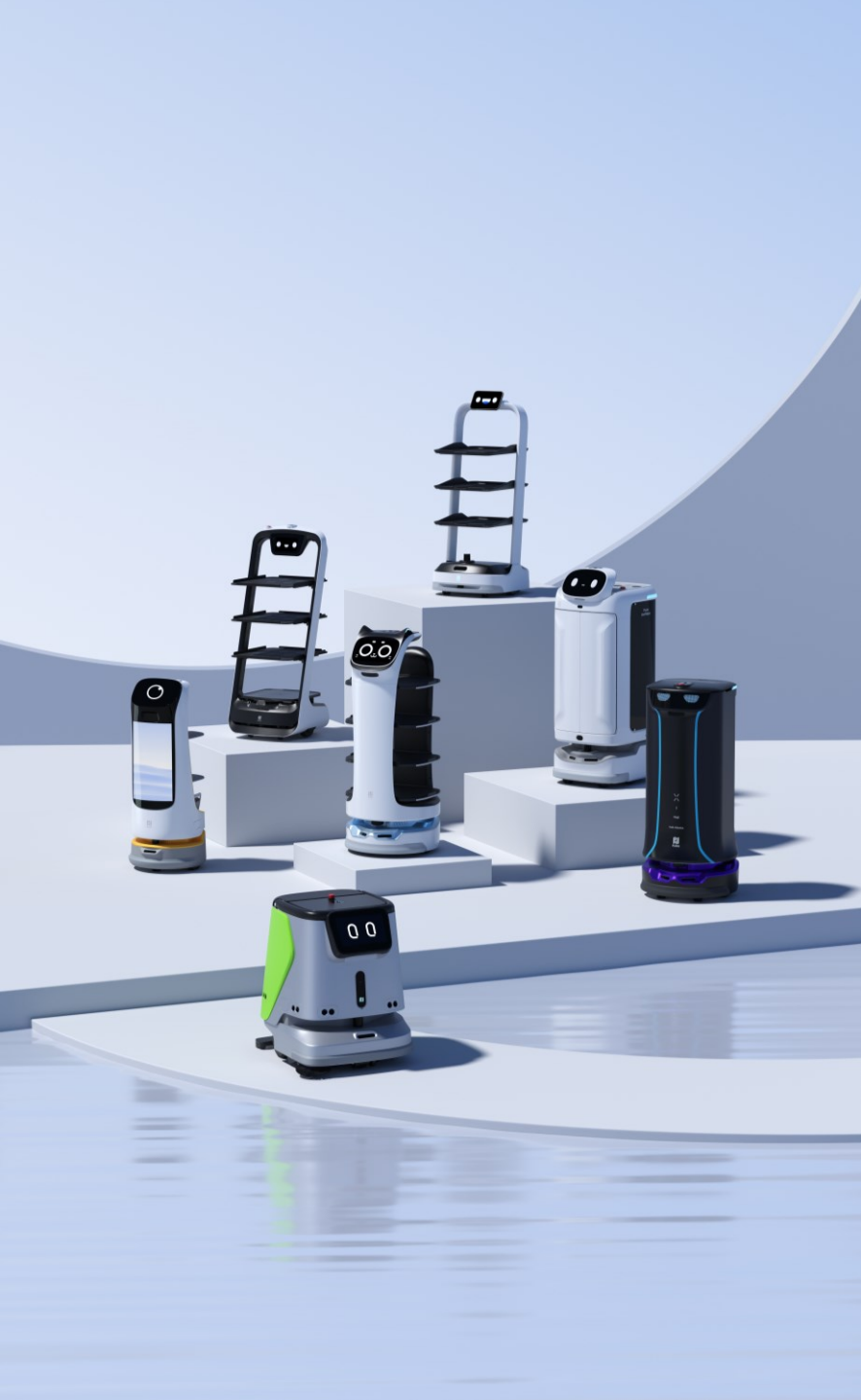


Convenient consultation
Unmanned retail
Safety and hygiene measures

Secure procurement

Stable rental and advertising revenue

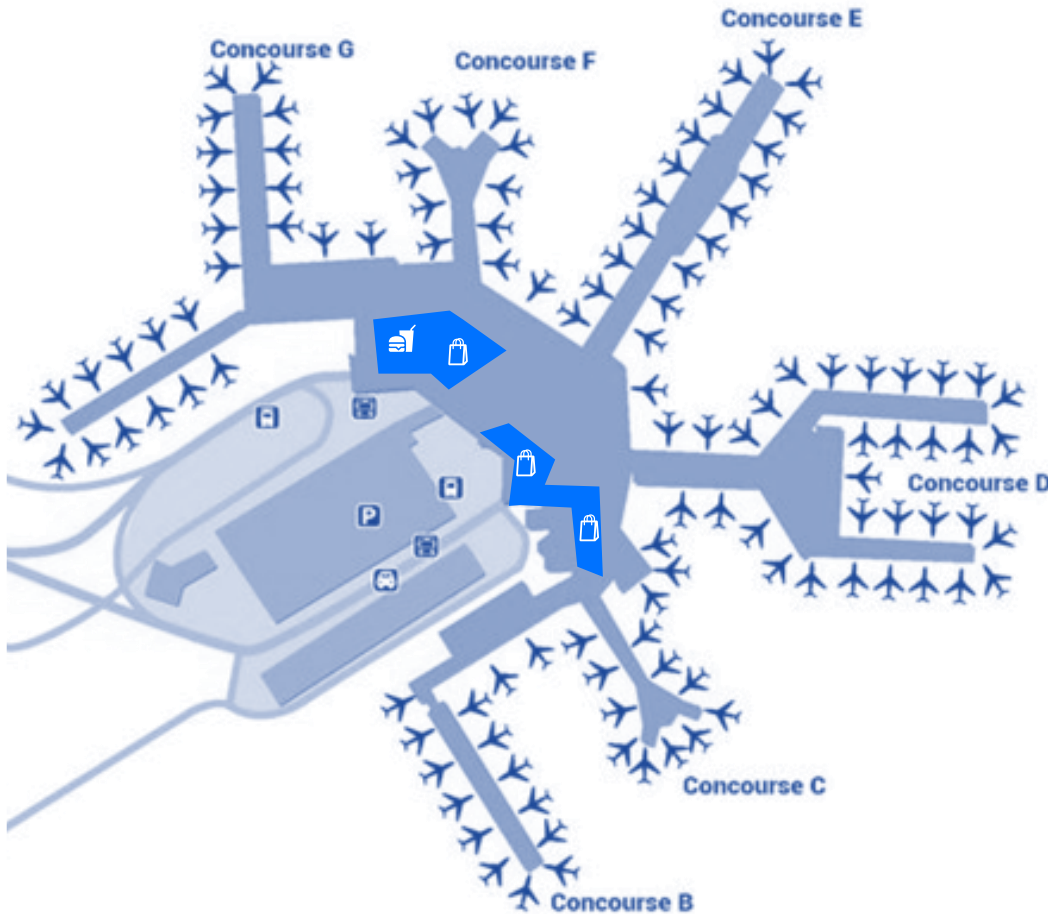
Increased consumer spending



02

Scenario Solutions

Pain Points in Airport Commercial Marketing



Difficult cost control

- Traditional advertising methods, such as posters and large screen ads, have high deployment costs and limited locations. The cost of changing ads is also high.

Insufficient coverage

- Airport commercial marketing often focuses more on advertising along traffic routes, neglecting the largest and most densely populated waiting areas, resulting in wasted business opportunities.

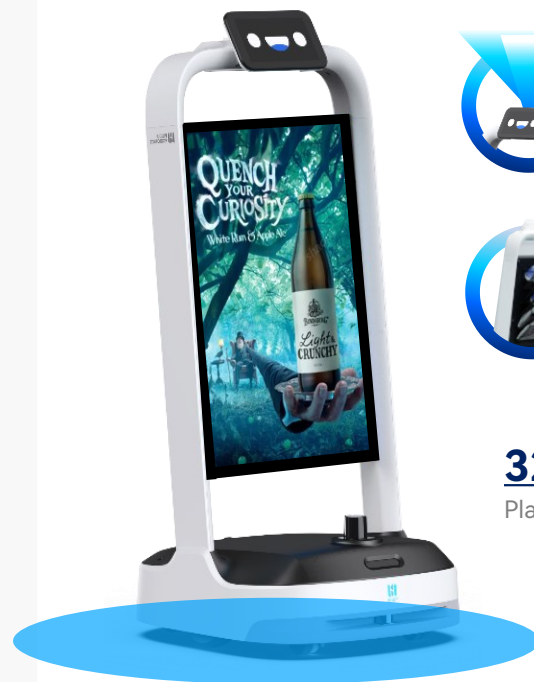
Limited effectiveness

- Fixed displays and limited advertising locations
- lack of innovation in advertising formats, making it difficult to attract consumers' attention
- rigid and limited display of advertising and promotional content that cannot be easily changed
- blind placement of static ads, unable to achieve maximum value.

Intelligent Marketing Solution with Robots

Cruise around designated routes in the waiting area and commercial zone, delivering dynamic advertising messages to passengers through large screens

PuduBot2



Vslam Technology

Strong adaptability to complex environments



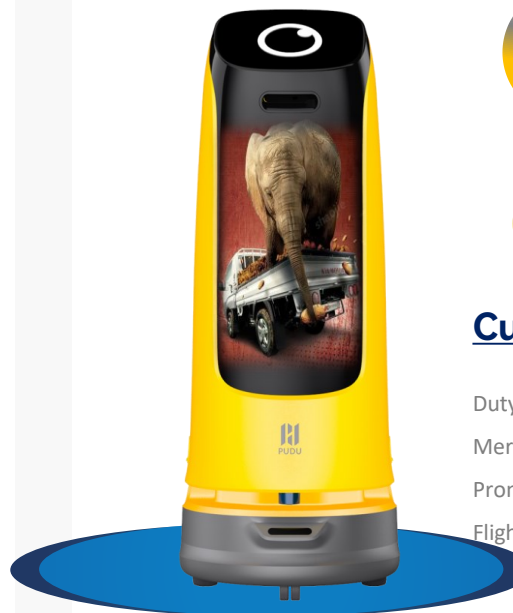
Back storage basket

Convenient for storing promotional materials

32" touch screen

Plays large screen advertisements in the store

Kettybot



Dual-screen design

Top touch screen for UI interaction



Storage tray

Can display sample products

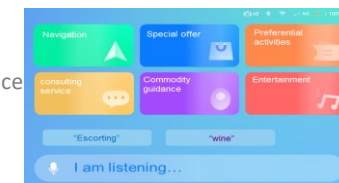
Customized 6-grid function

Duty-free product guide

Merchant location guidance

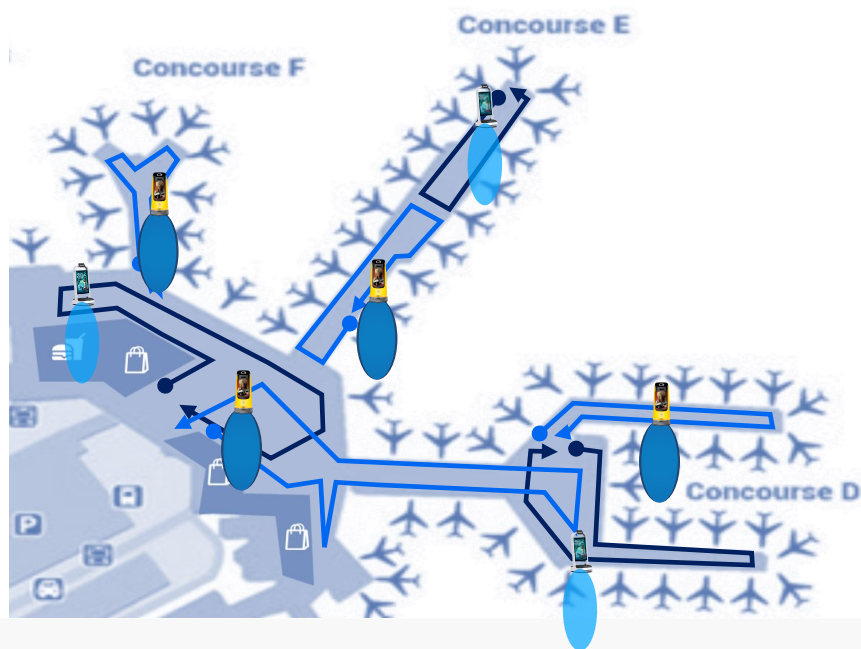
Promotional activities

Flight information inquiry



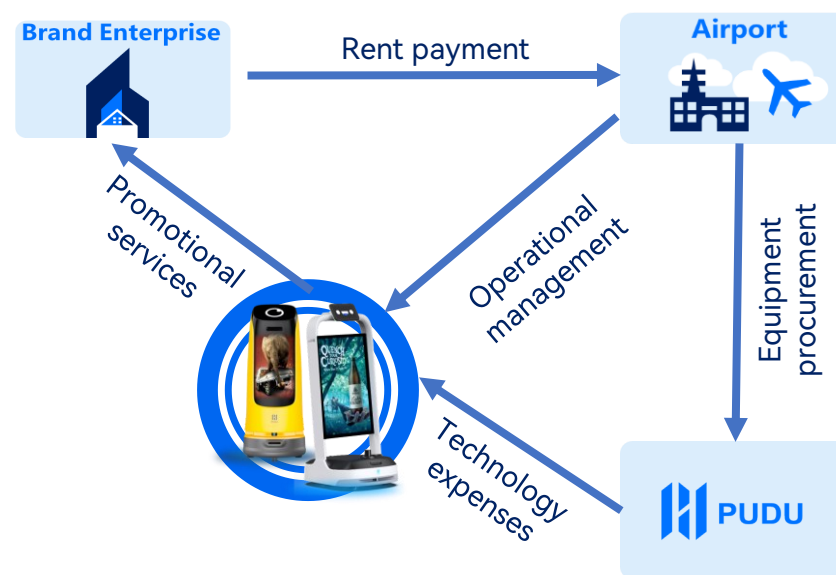
Deployment Recommendations

- Work mode: **Cruise mode**
- Route topology: **Area grouping coverage or area cross-coverage**
- Recommended configuration: **2000m²**



Leasing model is more attractive for marketing by airport merchants. Airport operators can design various business models:

- **Specific area advertising**
- **Specific time advertising**
- **Special holiday advertising**



Robot Information Service Solution



PuduBot 2

PUDU provides API interfaces to collaborate with airports or third-party technology vendors to complete solution development

Information Inquiry

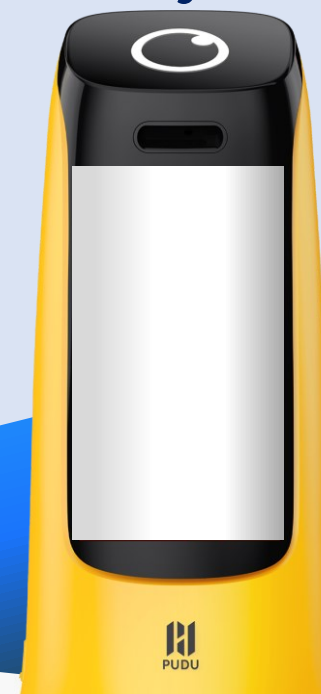
- The robot's large screen can play flight information during advertising breaks while cruising
- supports touch screen inquiry of flight information.

Emergency Broadcast

The robot's large screen can play designated content in special situations

- Missing person notices
- Gate changes
- Emergency requests

KettyBot



Pain Points and Opportunities

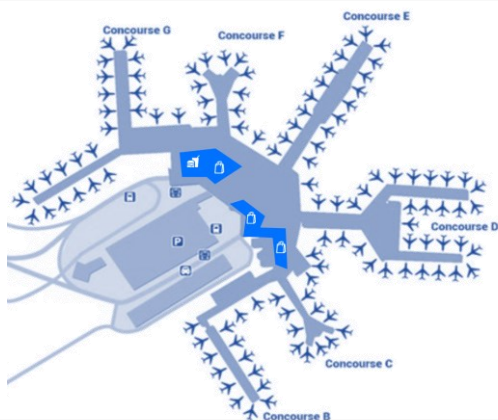
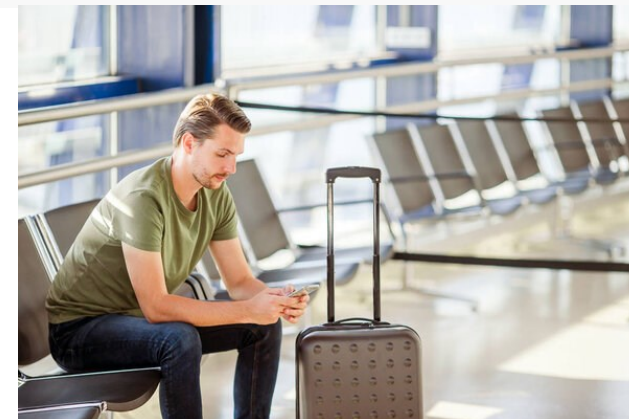


Distance

Barrier to Consumption

Missed Business Opportunities

- Layout of the waiting area and commercial area is far apart
- Passengers have to walk long distances to consume when waiting
- A large number of potential business opportunities are wasted



Online shopping platforms

Mobile payment

Intelligent robot delivery

- **Utilize intelligent retail**
- **Eliminate distance limitations**
- **Expand airport commercial retail to every corner**



Intelligent Retail Food Delivery Solution

Food Delivery Expert



Food Delivery Expert



Gate Access



Door Authentication



Laser SLAM Positioning Navigation



Autonomous Obstacle Avoidance



75cm Passability



Multi-robot Scheduling



Variable Door Compartment Combination



Automatic Recharge

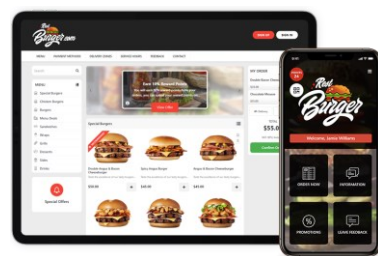
FlashBot



Intelligent Retail Food Delivery Solution



Scan QR code to link to phone number and address information



1. Place orders online
2. Mobile payment
3. Backend links delivery robot



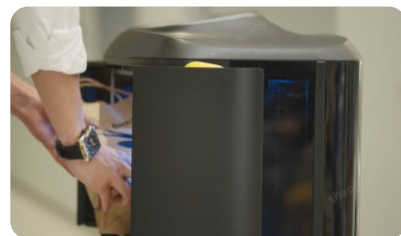
1. Robot arrives at the merchant
2. Send arrival reminders to the merchant via SMS and voice messages



1. Authenticate the goods and match them with the order
2. Place the goods inside
3. Close the cabin door



1. Robot arrives
2. Send SMS or call the customer



1. Authenticate and open the door
2. Customers take the items themselves and click to complete the order

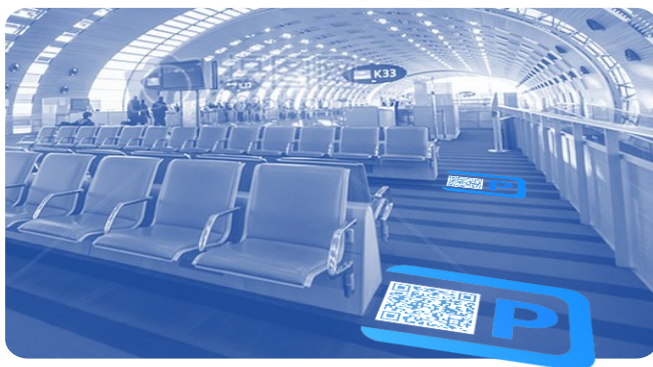


1. Return to the charging station after completing all tasks

Note: PUDU provides API interfaces third-party technology vendors to complete solution development

Intelligent Retail Food Delivery Deployment

Robot Docking Point Deployment



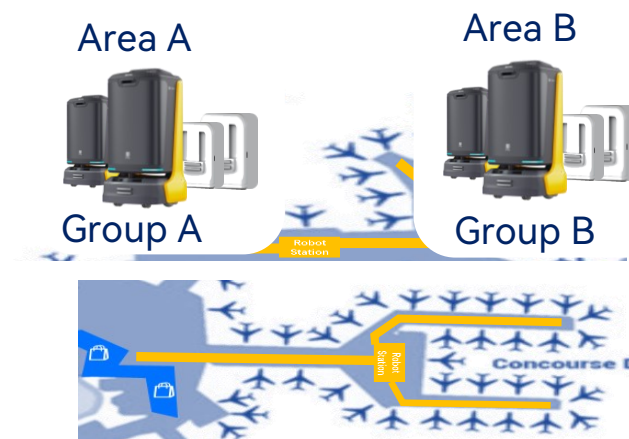
- Deploy dedicated robot docking points next to each seat in the waiting area
- Affix QR codes to the docking points for location association

Centralized Delivery Robot Station Deployment:



- Deploy robot service stations near the commercial area
- Robots are shared by all merchants, and tasks are assigned to robots by third-party ordering software in the backend
- Robots cross-cover all areas

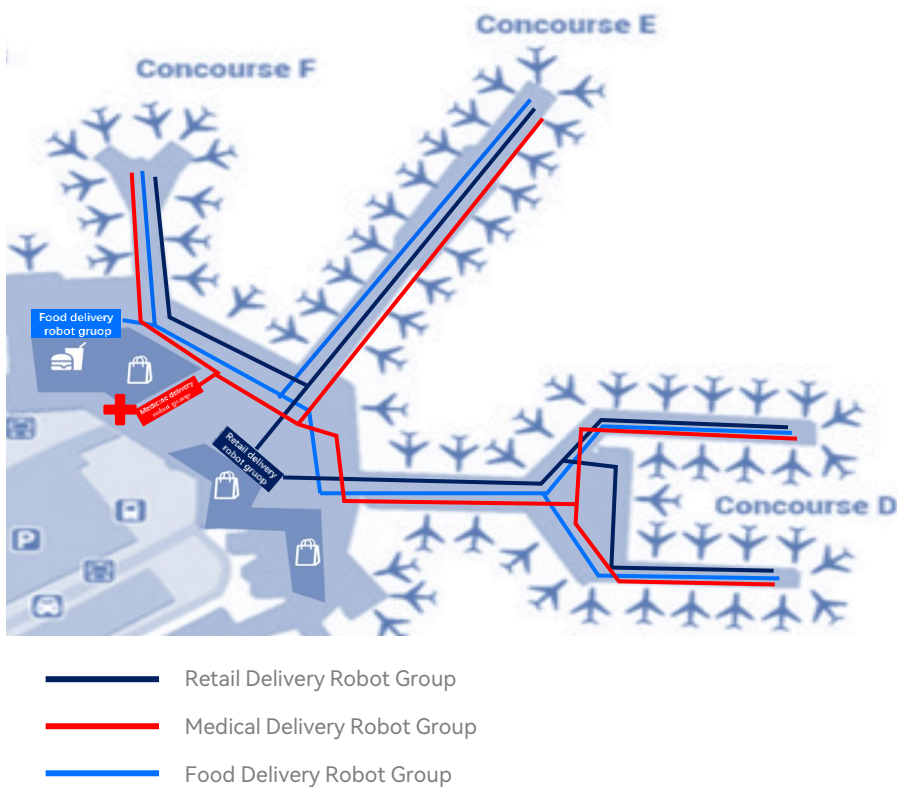
Distributed Delivery Robot Station Deployment



- Deploy robot service stations near the waiting area
- Robots are shared by all merchants, and tasks are assigned to robots by third-party ordering software in the backend.
- Robots are grouped to cover areas.

Retail Food Delivery Deployment

Robot Station and Route Planning



Food Delivery



Retail Delivery

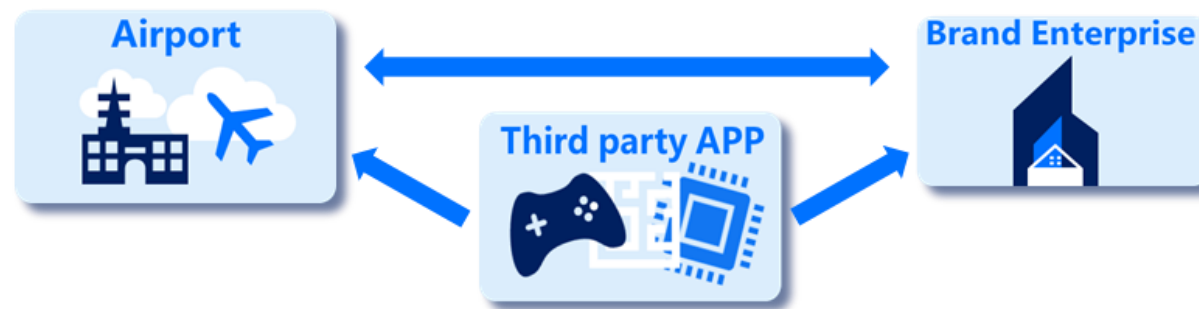


Medical Delivery

- Robots can be grouped according to business categories such as food delivery, retail delivery, and medical delivery
- Robot service stations should be established near the corresponding business areas based on functional requirements.
- Retail and food delivery can share robots, while medical delivery is recommended to have a separate group with dedicated routes.

Retail Food Delivery Deployment

Business Model Suggestions



- The airport should be responsible for operating the robot system
- The airport charges delivery service fees to the corresponding merchants based on robot orders
- Billing systems can be developed by third-party API providers in collaboration with PUDU

Airport Cleaning and Disinfection

Airport Cleaning and Disinfection Challenge

01. High Cost

- Airports have large areas and high passenger flow, requiring high standards.
- Significant manpower and equipment investment result in high costs.

02. Outdated Technology

- Disinfection equipment and technology are outdated and cannot meet air defense requirements.



03. Difficulty in Recruitment

- Cleaning is one of the top ten occupations in recent years with severe labor shortages.
- Cleaning staff are often elderly, with low education levels and low efficiency.

04. Management Difficulties

- Cleaning quality is difficult to quantify, and feedback is often delayed.
- Lack of digital monitoring methods

Intelligent Cleaning Solution

CC1



Intelligent and efficient cleaning robots truly free up hands

Customize exclusive intelligent cleaning solutions based on different areas, floor materials, cleaning requirements, and time planning

One CC1= 8400m²/day

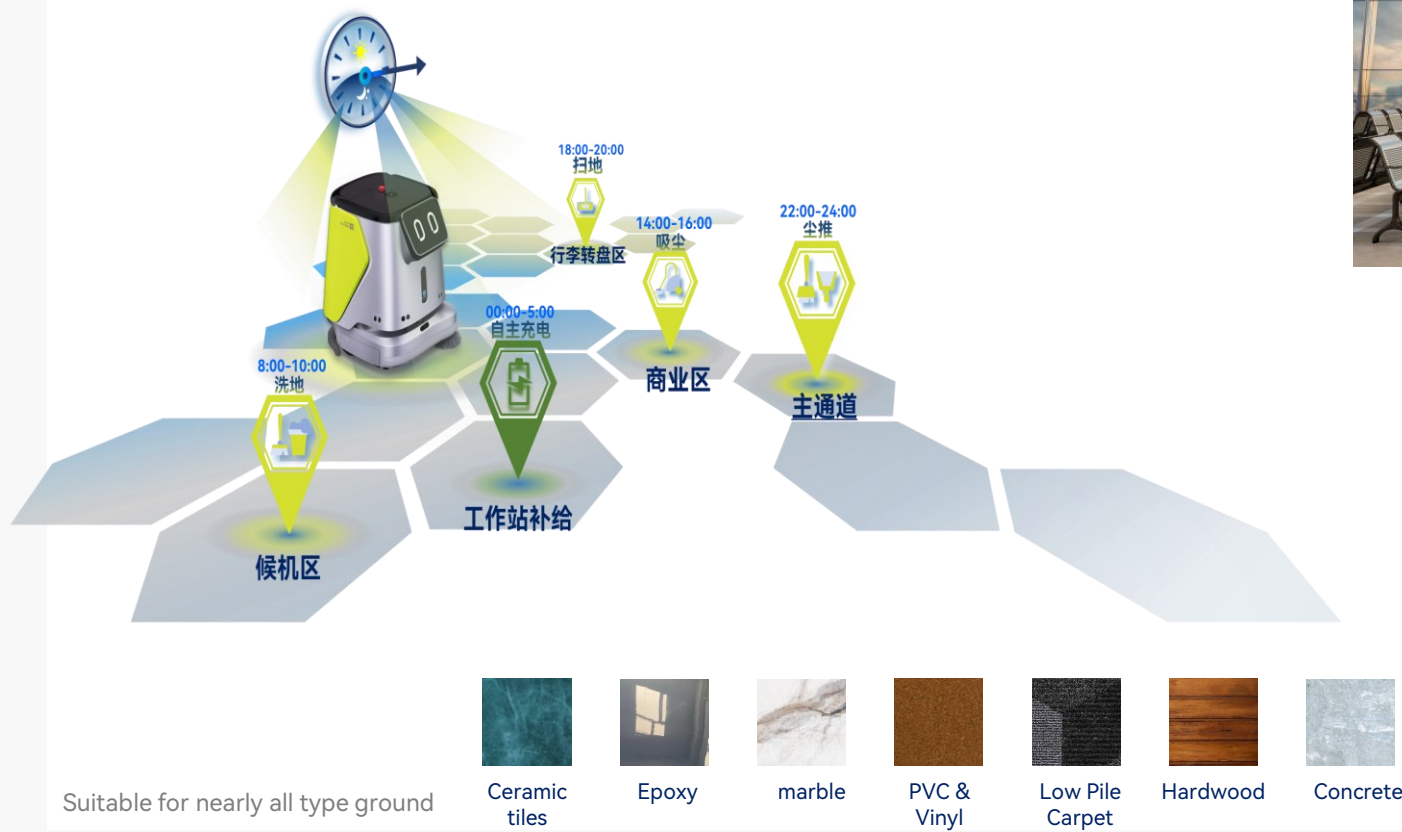
Unmanned Operation Solution

CC1 can autonomously return to the workstation, replace water, and recharge, enabling long periods of independent work



Intelligent Cleaning Solution

TWO digital cleaning management tools



01. Intelligent Cleaning Path Planning



02. PC Platform

Intelligent Disinfect Solution



Traffic node dry fog disinfection



Area moving dry fog disinfection



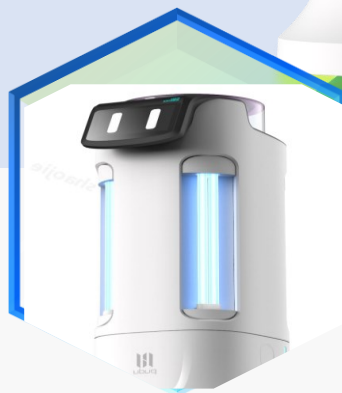
The main traffic road dry fog cruise disinfection



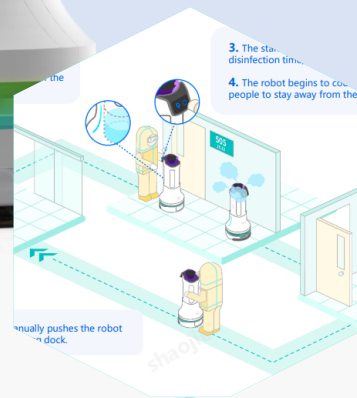
Spare time UV cruise disinfection



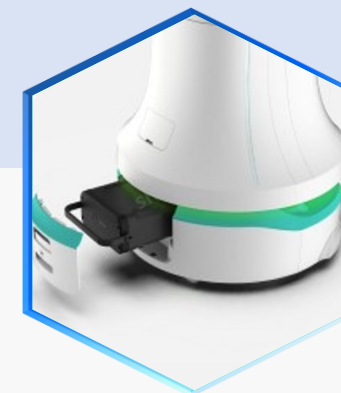
Ultra dry fog spraying



Large capacity disinfection tank



Multiple operating modes



Exchangeable design

PUDU Scheduler





Unmanned Robot Solution

PUDU self-charging solution truly liberates management resources and achieves unmanned operation

PUDU



No need for manual intervention, saving time and effort

PUDU



Scene Expansion

Subway



Airport



Comprehensive Services

- Information Query
- Emergency Broadcasts

Commercial Support

- Advertising and Promotions
- Food Delivery

Supporting Facilities

- Cleaning and Disinfection
- Medical Delivery

Train Station



Scene Expansion

Railway Station Scene

Kettybot

- Cruise playback of ads. in the waiting hall
- Platform for querying information

CC1

- Schedule task cruise cleaning in the lobby area
- recommended to schedule based on train schedules

Characteristics:

- 1、 Large area with high passenger flow
- 2、 Significant peak and off-peak periods

PUDU2

- Playback of train schedule information
- Emergency information playback

Puductor 2

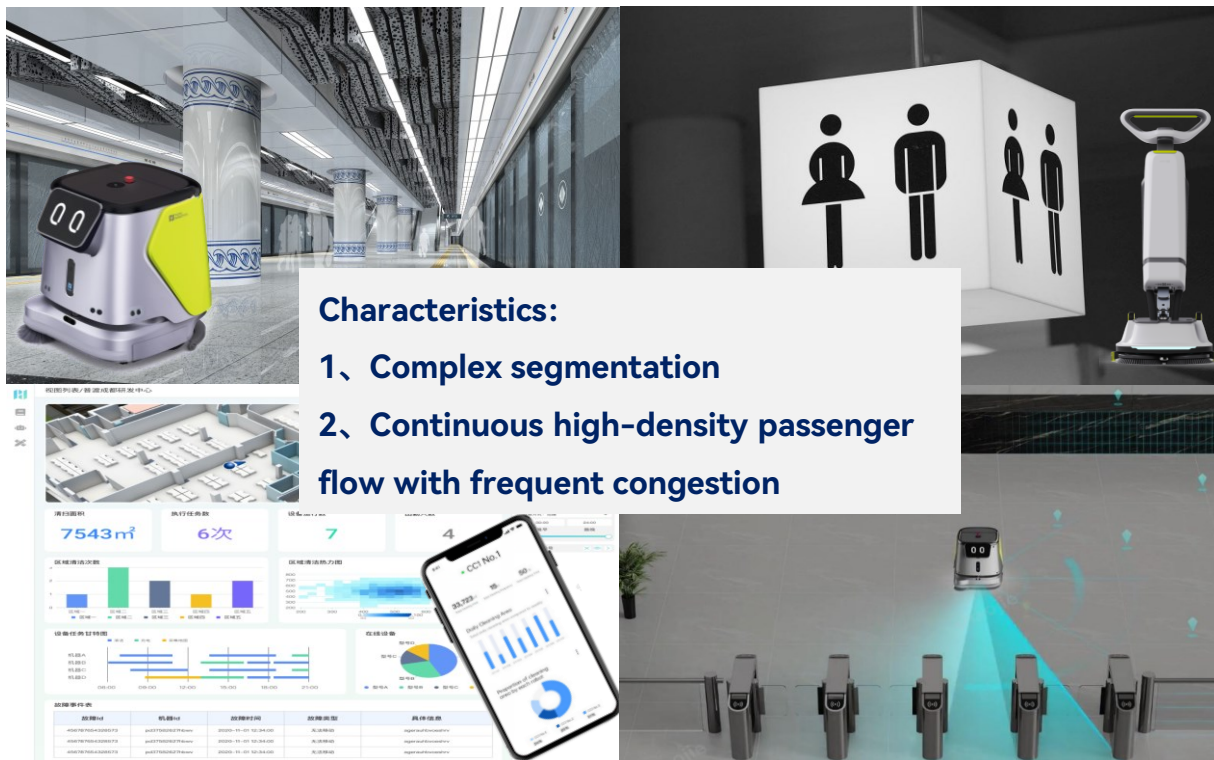
- Focused UV disinfection in seating areas during unmanned nighttime periods

Note: PUDU provides API interfaces to third-party technology vendors to complete solution development

Scene Expansion

Subway Scene

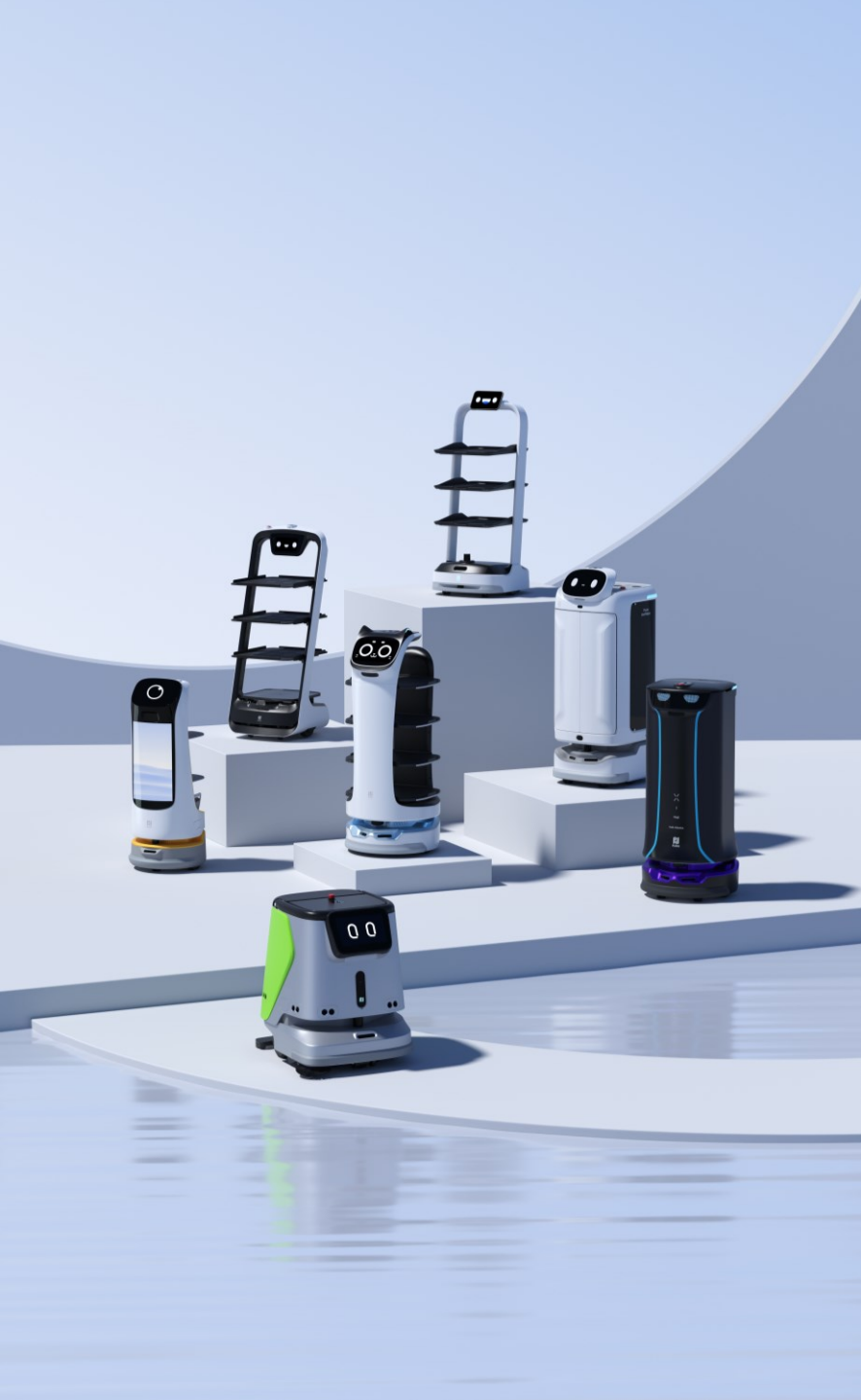
- Off-peak cleaning of large and even ground surfaces



- Focused cleaning in dirty areas

- Continuous high-density passenger flow with frequent congestion

- IOT communication with subway gates



03 Value

Value



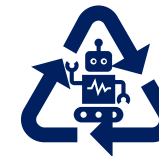
Creating Business Opportunities and Building a Commercial Ecosystem

- Innovative robot marketing solutions enhance commercial advertising coverage
- Intelligent delivery combined with online sales platforms establish an all-in-one consumer ecosystem, empowering business opportunity exploration and increasing transaction probabilities



Cost reduction and efficiency improvement

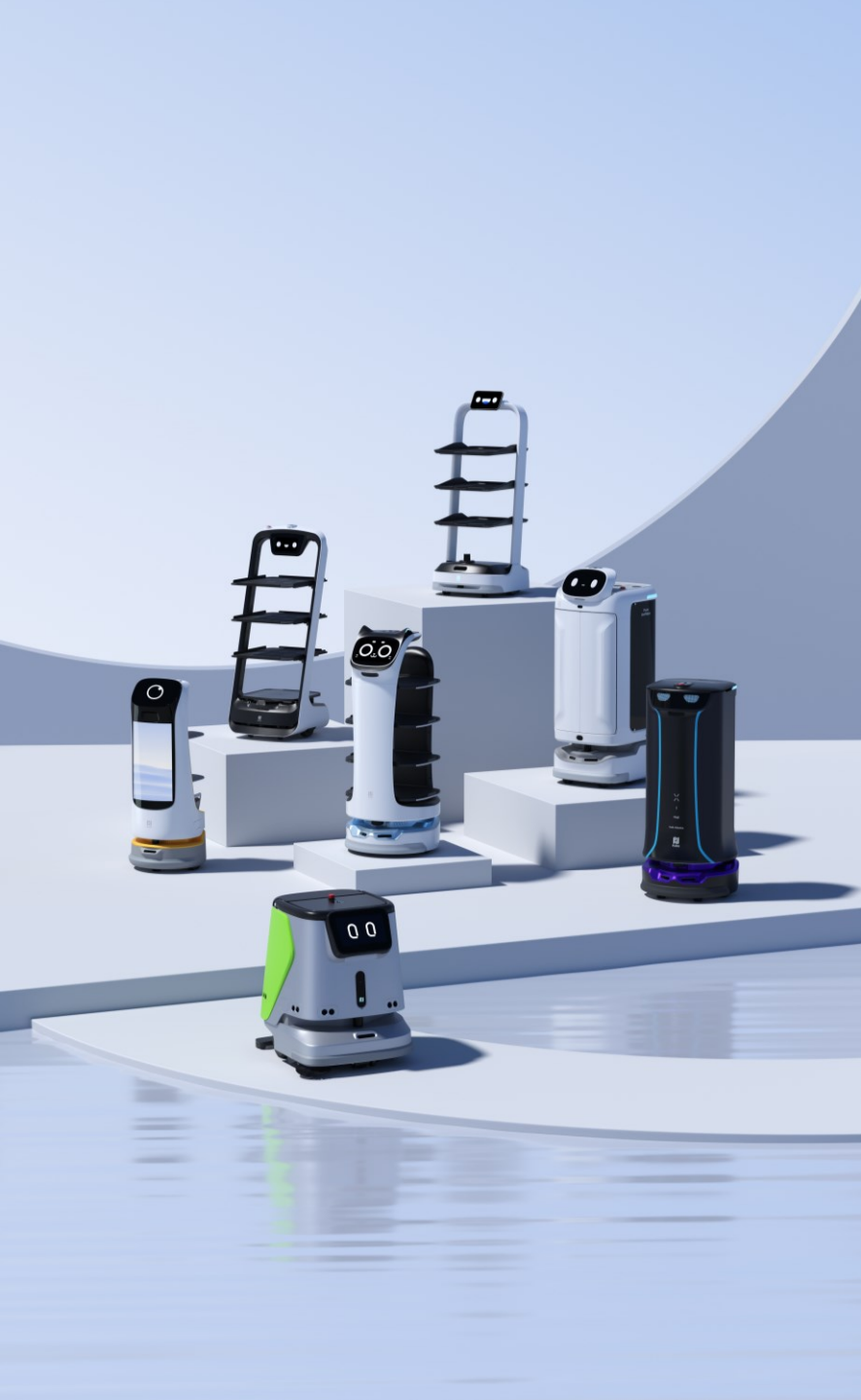
- Alleviate the workload of frontline workers and enhance the efficiency of basic services in transportation hubs.
- Alleviate the management's pressure on labor recruitment and operational costs



Intelligent strengthening of basic service guarantees

- Establish a mobile information inquiry and broadcasting platform to enhance the reach of information in crowded hubs, providing better service guarantees for travelers.
- Implement intelligent cleaning and disinfection solutions to ensure basic public health





04

Product Family Matrix

Creating truly useful robot to improve human productivity and quality of life





Product Family

Delivery Robots

Bellabot

Pudubot 2

Pudubot

Kettybot

Swiftbot

Holabot

Flashbot

Cleaning Robots

CC1

SH1

IOT Solutions

Pager

Autodoor

Elevator

4G/lora
Watch

Table
Tracker

Bluetooth
Speaker

...

Accessories Solutions

Cup
holder

Food
cover

Tray

Display
shelf

Self-
charging
station

...

Pudu Cloud

PUDU Merchant
Management Platform

PuduLink App

PUDU Cloud Platform

Technology

PUDU OS

Positioning and
navigation algorithm

Perceptual obstacle
avoidance algorithm

Motion control
algorithm

Multi-machine
scheduling algorithm

AI interactive
algorithm

Cloud platform
algorithm

Simulation testing
platform

1-N Customized Solutions

Voice

Emoji

Skin

SDK

...

Delivery Robots



GOOD DESIGN
AWARD 2022

BellaBot

Novelty、cute、fully-perceptive food delivery robot



Contactless delivery



Multiple located



Tray Sensor



Flexibility



Personalized
Presentation



Multi-interaction



Changeable
battery



Safety



Service



PuduBot2

Latest、high-performance、extendable、adaptable,
intelligent delivery robot for multiple scenarios



Delivery mode



Shipping mode



Cruise mode



Direct mode



Dish-recycle mode



Birthday mode



KettyBot

With Ad screen, serving as both a delivery and
receptionist



Minimum passability



AD



Reception



Navigation



Voice interaction



Work plan



Delivery



Self-charging



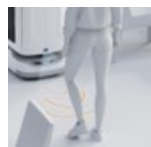
Feature settings

Delivery Robots

SwiftBot



Delivery Robot for Smooth Peak Hour Operations, Redefining Social Interaction between Humans and Robots



Avoidance Reminder



Operating Status Projection



Atmosphere Projection

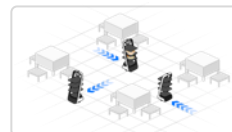


Foot-activated Door Projection

PuduBot



Classic Intelligent Food Delivery Robot, Pioneering the Industry of Trackless Delivery Robots



Scheduling



3D avoidance



Independent Suspension



Ultra-long Endurance



Optimal Path Planning



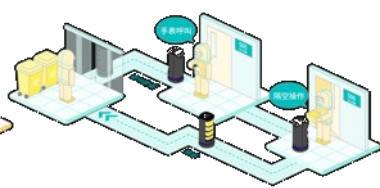
Sun-resistant

HolaBot

First Delivery Robot with Remote Call Notification Function for Multiple Delivery Scenarios



Dish-recycle



medical waste recycle

FlashBot

Full-Scenario Delivery for Hotels, Offices, Apartments, and Residential Buildings



APP call



Independent cabin door



Customized disinfection time



Take elevator



Auto-door



Arrival notification

Cleaning Robots



PUDU CC1

All-Purpose Cleaning Monster: Four-in-One Scrubbing, Sweeping, Mopping, Vacuuming

A machine that integrates sweeping, mopping, vacuuming, and dusting, easily meeting all cleaning needs with just one device



dusting



mopping



sweeping



vacuuming



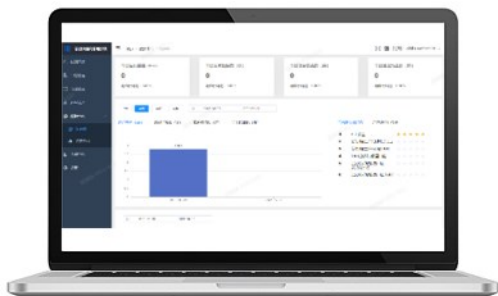
PUDU SH1

Professional Mini Digital Floor Scrubber: A More Professional and Thorough Cleaning Solution

The compact and flexible design allows for easy transition between tasks on multiple floors and surfaces



PUDU Cloud



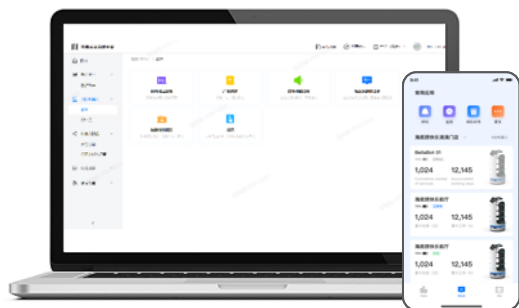
PUDU Cloud Platform

For distributors

Management platform for managing business opportunities, clues, sub-distributors, merchant customers, and selling robots.

PC – Web

- 1) Singapore Group: <https://css.pudutech.com>
- 2) Germany Group: <https://csg.pudutech.com>
- 3) China Group: <https://cs-internal.pudutech.com>



PUDU Merchant Management Platform

For end-store

A platform for robot configuration, remotely controlling, managing stores and viewing robot operation data.

PC – Web

- 1) Singapore Group: <https://businesss.pudutech.com>
- 2) Germany Group: <https://businessg.pudutech.com>
- 3) China Group: <https://business.pudutech.com>



PuduLink App 【iOS】



PuduLink App 【Android】

IOT Solutions

Pager



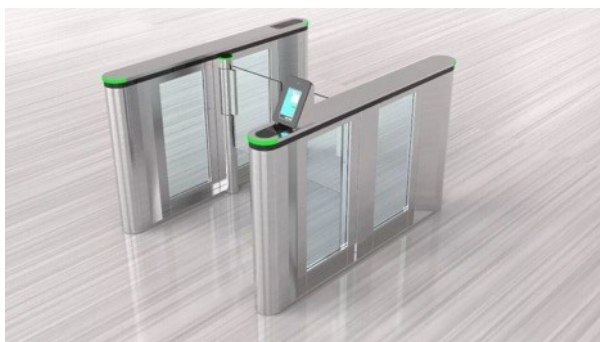
4G/Lora Watch



Elevator



Auto-door



Bluetooth Speaker

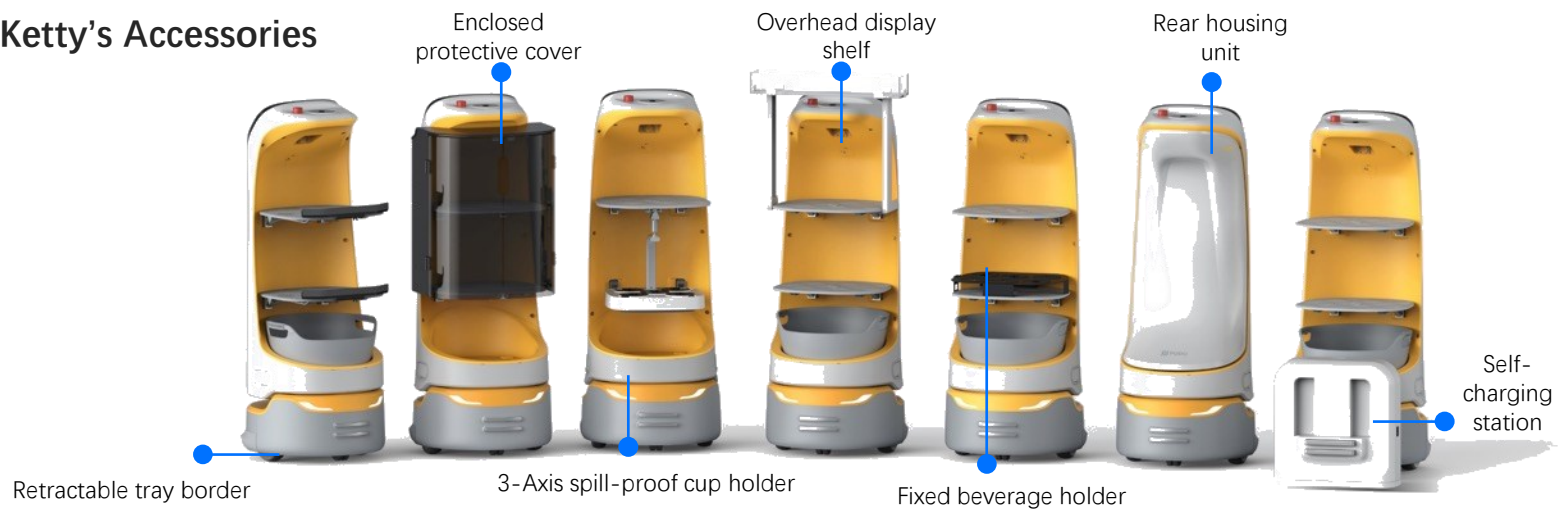


Table Tracker



Accessories Solutions

Ketty's Accessories



Enclosed Protective Cover



Bearing tray (Bella)



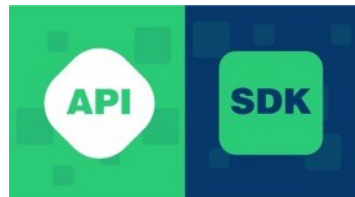
Cup holder (Bella)



1-N Customized Solutions

android 

PUDU OS



Robot SDK



Skin



Customized Emoji



Customized Voice

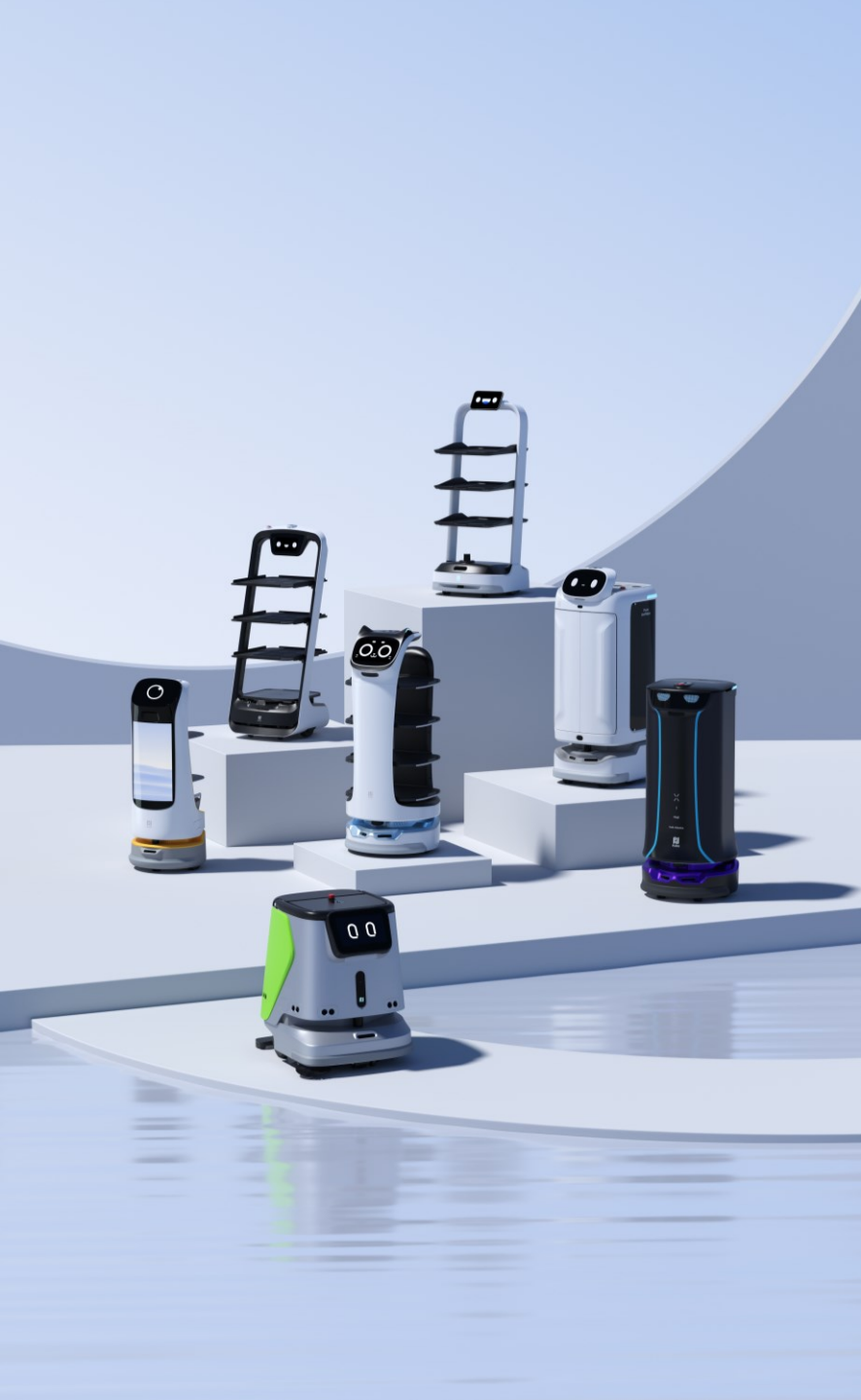


Customized Software



Combined with 3rd party hardware

More options to come soon



05

PUDU Introduction

PUDU Introduction

Pudu Robotics

In 2016, Pudu Technology was founded in Shenzhen as a national high-tech enterprise that specializes in research, design, production, and sales of commercial service robots. After seven years of development, Pudu Technology has established hundreds of service points worldwide, with business in over 60 countries and regions, delivering more than 60,000 units. It has become a leader in the field of commercial service robots globally. In the age of intelligence, Pudu Technology will continue to uphold the "inventor's spirit" and solidify its technology, refine its products, create truly useful robot products, and enhance the efficiency of human production and life.

* Relevant statistics as of May 2023

Mission

Use robots to improve the efficiency of human production and living

Vision

To become the world's strongest commercial service robot company



BE INVENTIVE



BE CUSTOMER
CENTRIC



THINKING IN THE
LIGHT OF FIRST
PRINCIPLES



BE ENTERPRISING
& ACCOUNTABLE



PURSUING FOR
THE ULTIMATE



MOVING FAST



BE OPEN-UP



EMBRACING
CHANGE

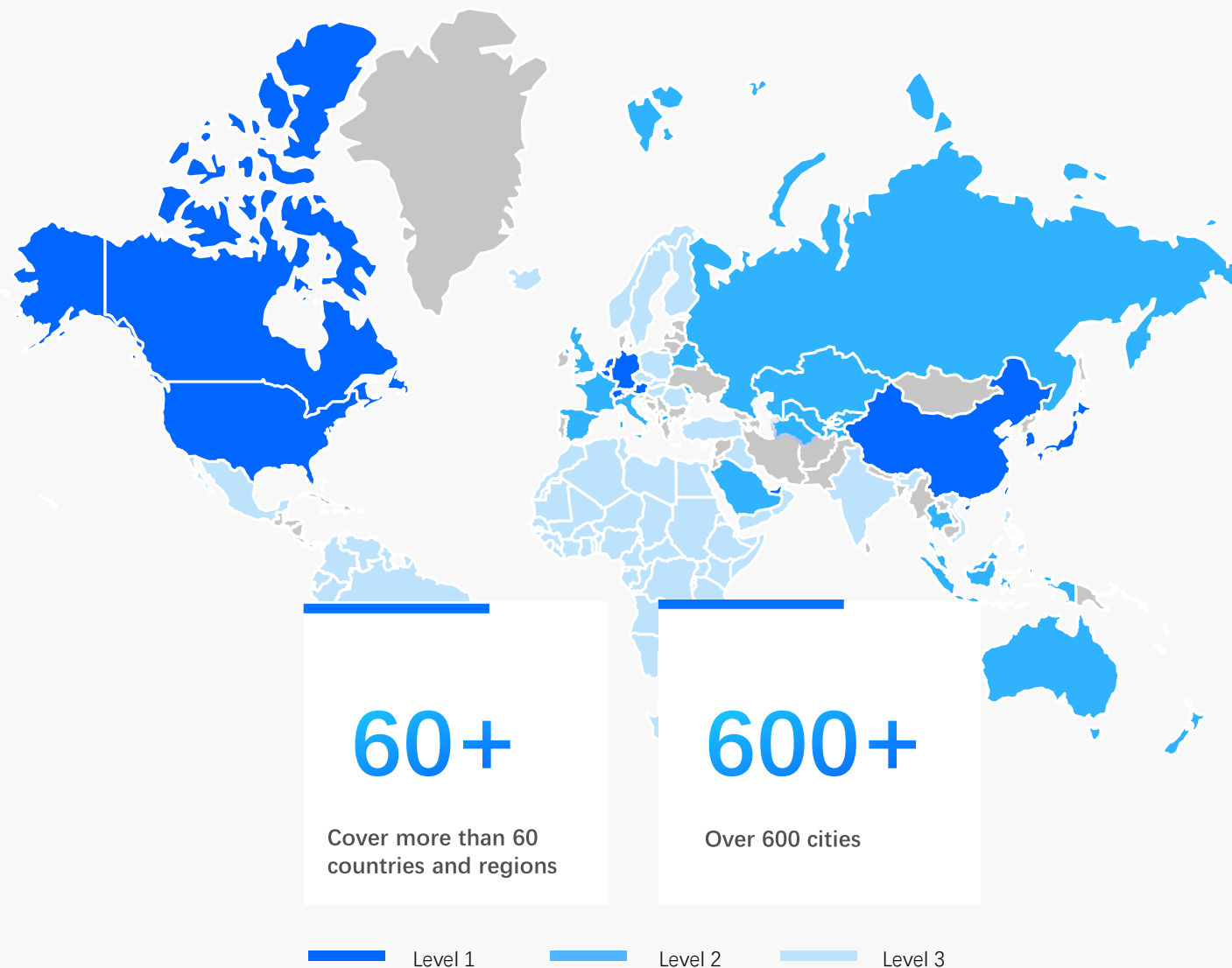


Scale Advantage

Globalization

Pudu Robotics has established a business presence in North America, Europe, East Asia, Asia-Pacific, the Middle East and Latin America. The products have been exported to more than 60 countries and regions around the world, covering more than 600* cities worldwide. Pudu Robotics has established a trustworthy international brand image and become one of the representative enterprises of China's "intelligent" manufacturing abroad.

* Relevant statistics as of May 2023



Scale Advantage

Total Sales Quantity

60,000+

60,000+ * units have been sold worldwide

Market Share in All Scenarios

TOP1

The market share in the full range of commercial service robots is No.1

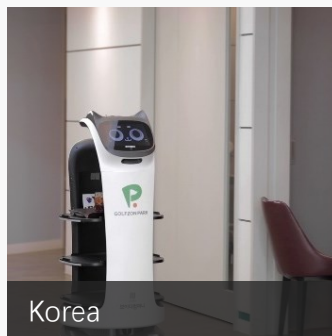
Market Share of the Overseas Catering Industry

>80%

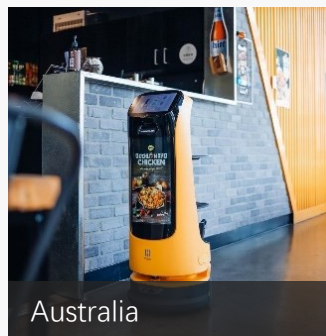
Overseas catering industry's market share > 80%

* Relevant statistics as of May 2023

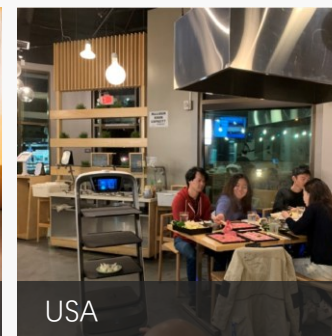
The world largest commercial service robot manufacturer



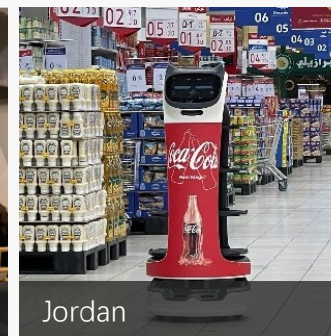
Korea



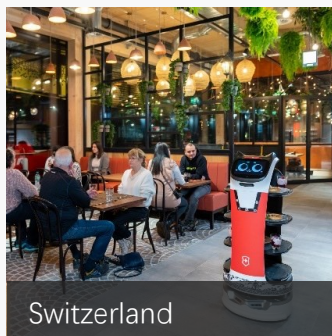
Australia



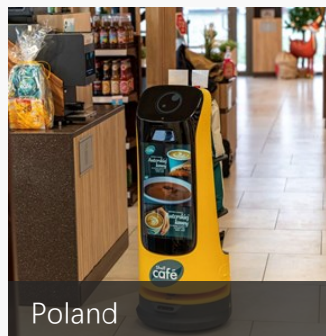
USA



Jordan



Switzerland



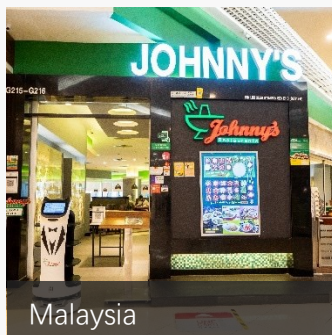
Poland



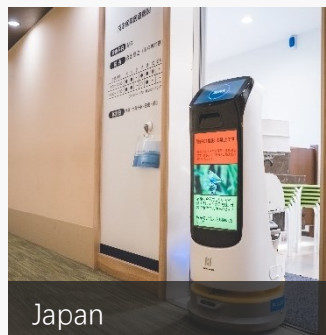
China-Shenzhen



China-Xiamen



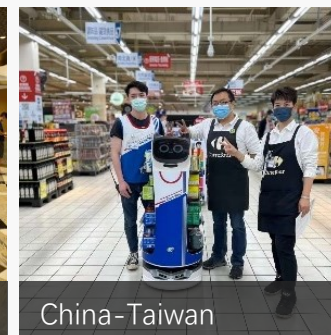
Malaysia



Japan



China-Hongkong



China-Taiwan



Horner and Certification

Certificate & Patent

All of existing products have passed the multi-certification that match the targeting markets.



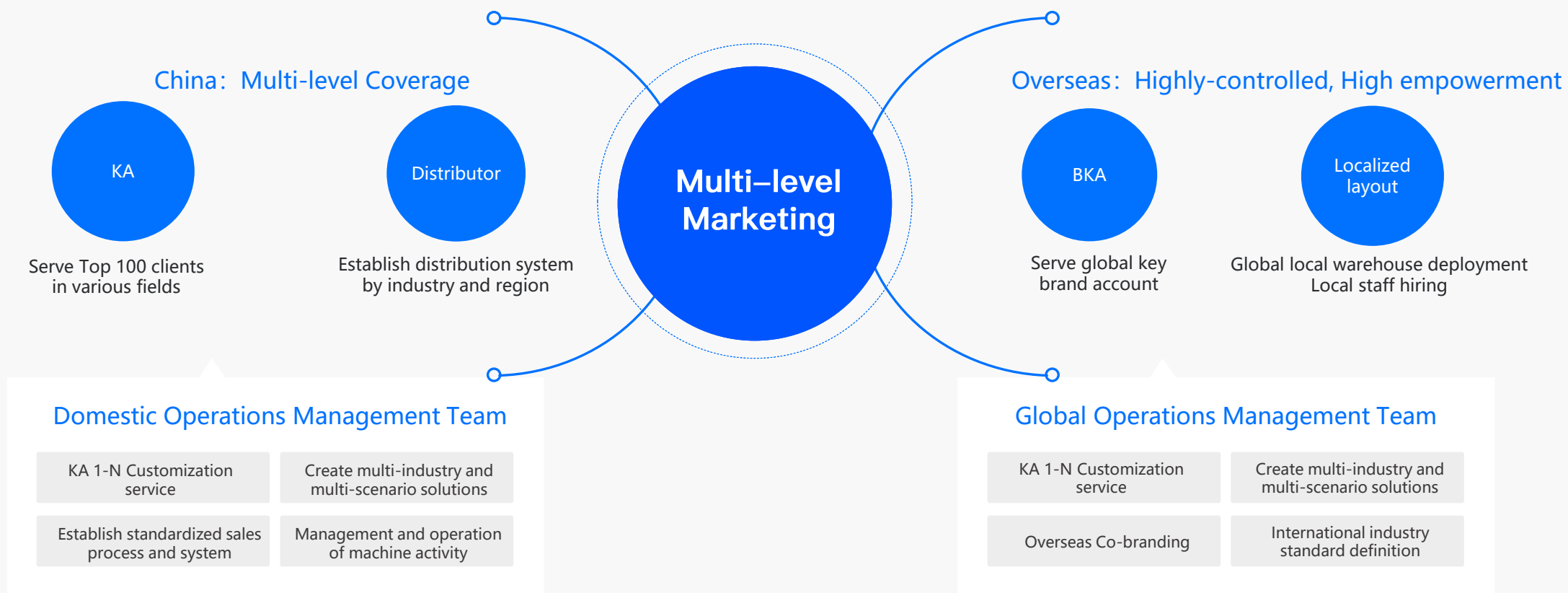
Pudu Robotics has applied for about 1300* core patents, of which invention patents are over 60%, involving positioning, navigation, motion control, human-computer interaction, robotics arm, servo motor, computer vision, cloud platform and other technical fields.

* Relevant statistics as of May 2023



Operation Advantage

Global Multi-level Sales System

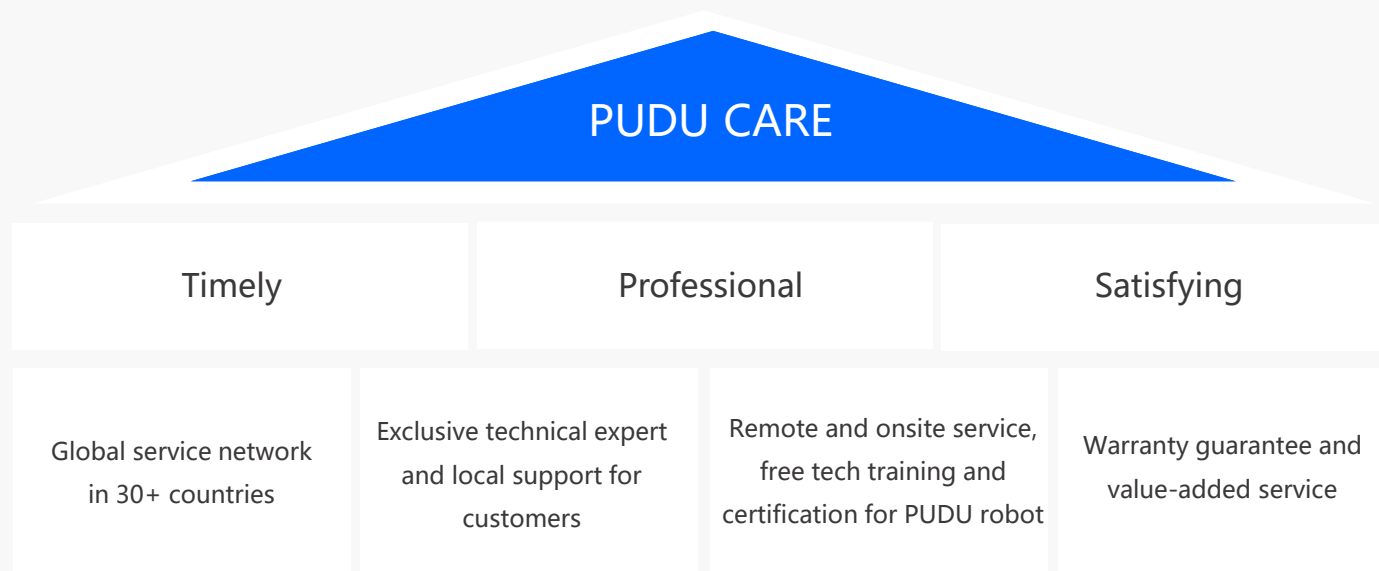




Operation Advantage

Offline Service:

- 1 Year Free Warranty
- 7 × 24 Hours Service
- Local Service & Support



Pudu Robotics has a thorough after-sales support system and humanized after-sales policy as well, whenever it is needed, we are going all out to offer service and reach your satisfaction.

Thank you!



+86 755-86952935



Global_sales@pudutech.com



5/F, Building 1A, Shenzhen International Inno Valley Phase 1, Dashi 1st
Road, Nanshan District, Shenzhen, China 518300