

Scenario Solution

# Shopping mall



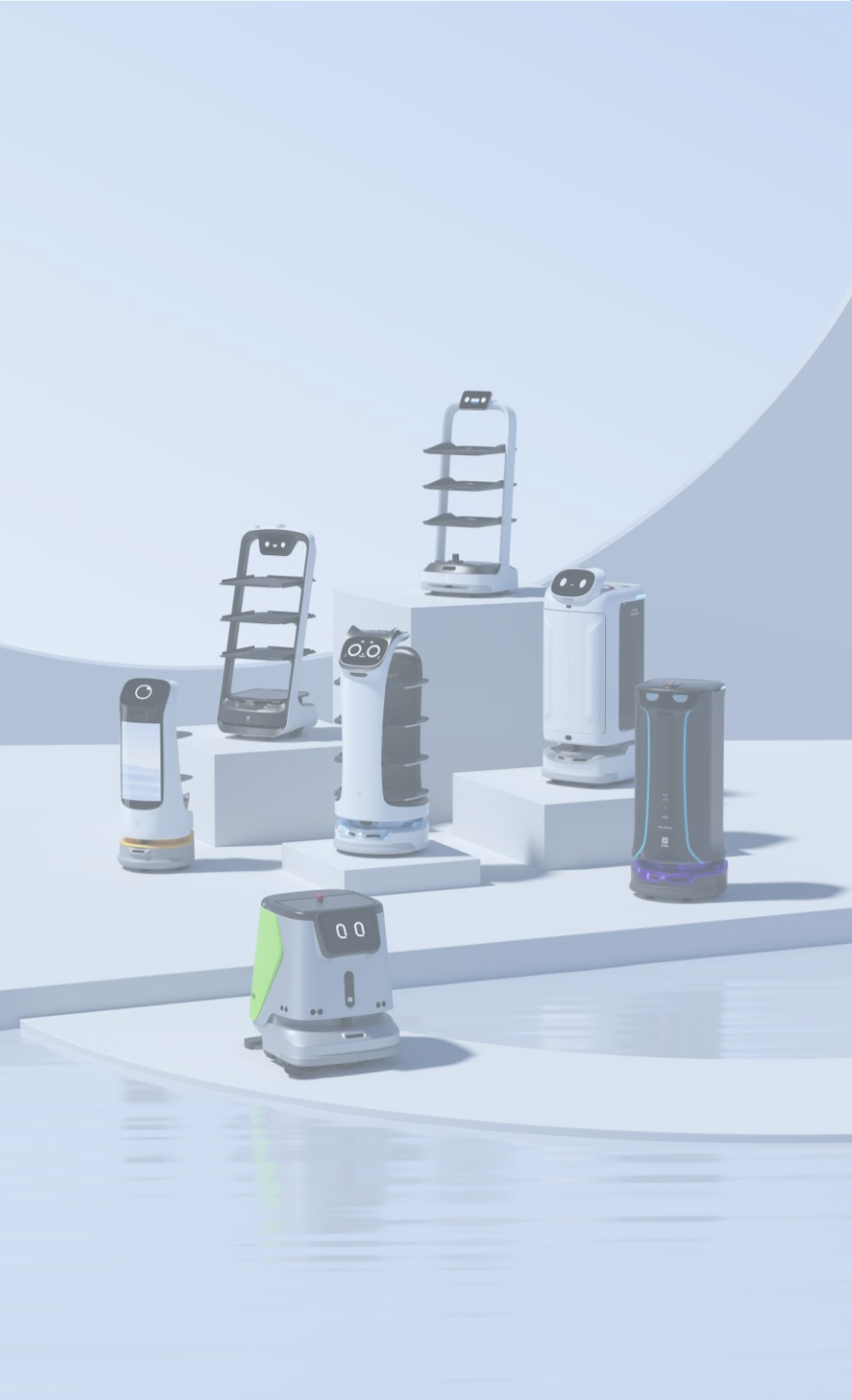
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**02 | Successful Cases**

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01

# Scenario Solutions

# Inflation deflates shopping sentiment

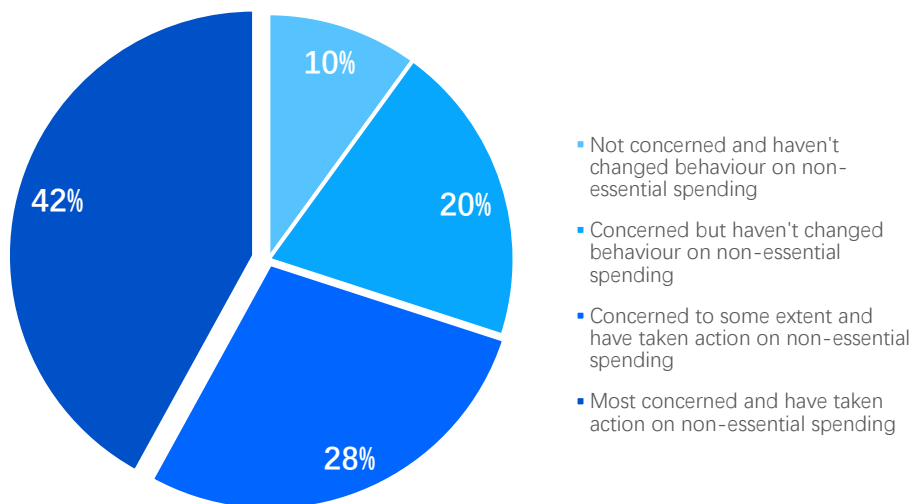
## How Consumption develops ?

In many parts of the world , prices have been rising more rapidly than incomes.

Fully **96% of surveyed consumers intend to adopt cost-saving behaviours** over the next six months.

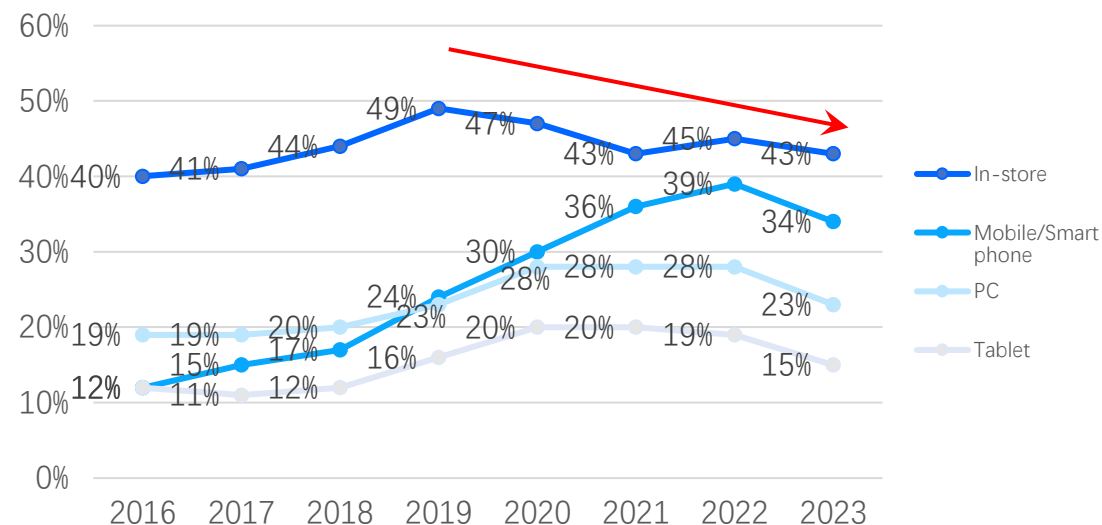
Source: PwC's February 2023 Global Consumer Insights Pulse Survey

### Global personal economic situation concern about non-essential spending levels



**Over 70% customer have taken action on non-essential spending**

### Shopping frequency (daily, weekly, etc.) over the last 12 months across different ways

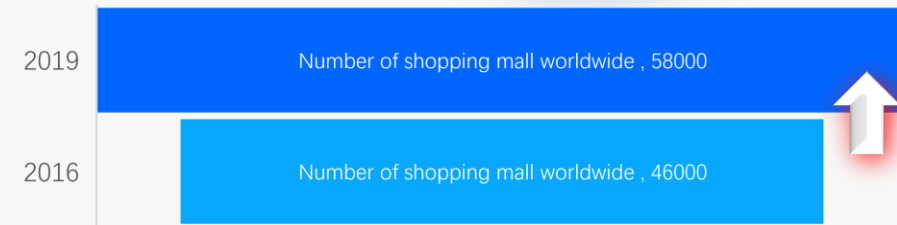


**The amount of consumer to shop in-store have constantly decreased since 2019**

# Current situation of shopping mall

## What's the shopping mall ?

Shopping mall usually includes multiple shops, restaurants, cinemas, supermarkets and other commercial facilities, aiming to provide consumers with one-stop shopping, entertainment, dining and other services.



The number of shopping malls worldwide has increased by **25%** in the past decade .

**10.5%**

U.S. mall vacancy rate in the first quarter of 2020

Source : US commercial property data company CoStar

**20%+**

China's shopping mall vacancy rate in 2019

Source : Chinese commercial real estate research institute Lianjia

**14.9%**

U.S. e-commerce sales growth rate in 2019 compared to 2018

Source : American market research company eMarketer

**1.8%**

Global shopping mall rents fell rate in 2019 compared to 2018

Source : International real estate consulting JLL

# Issues experienced while shopping in-store

- **Time issue** makes 37.5% consumers had bad experience
- **Not clear about the products** in each store made the other 37.5% consumers felt bad.

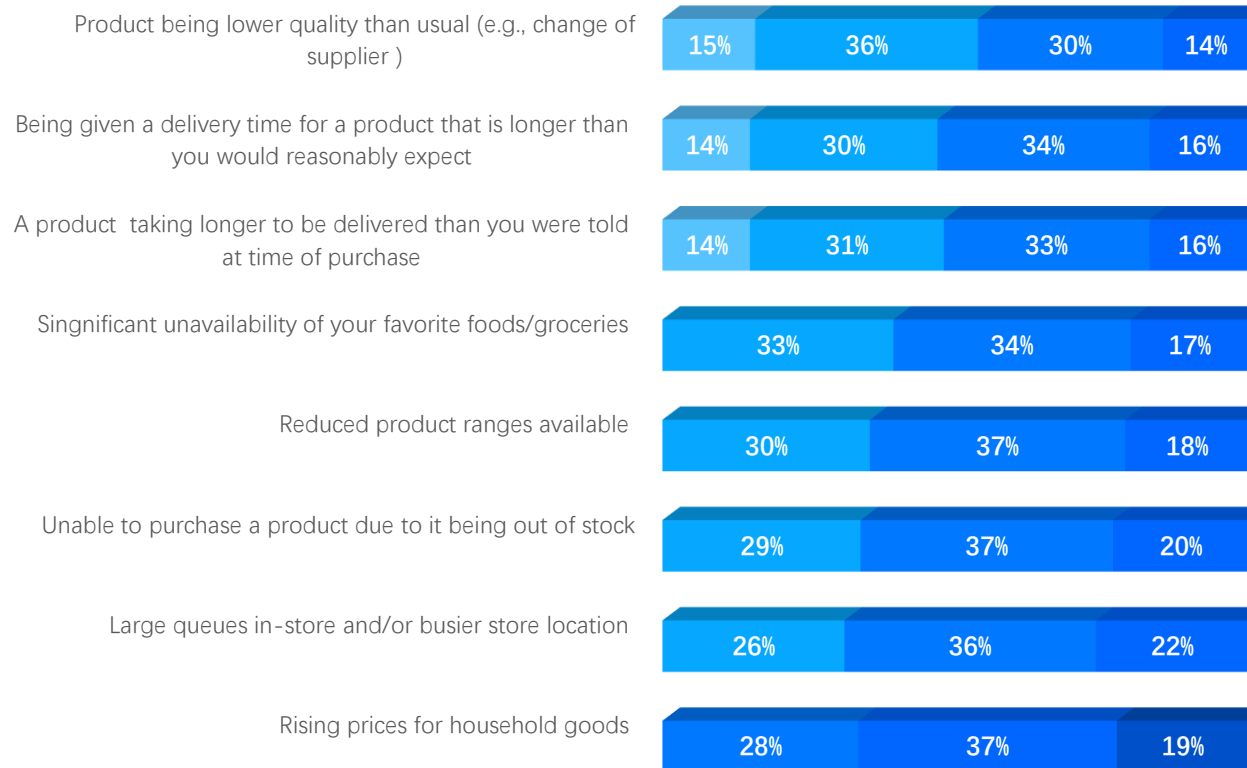
**1** 68% consumers said that **rising prices** are having the greatest impact on their in-store shopping experiences.

**2** 42% consumers said that **products being out of stock** are having bad impact on their in-store shopping experiences.

**3** 39% consumers said that **the hassle of standing in longer queues** are having the worst impact on their in-store shopping experiences.

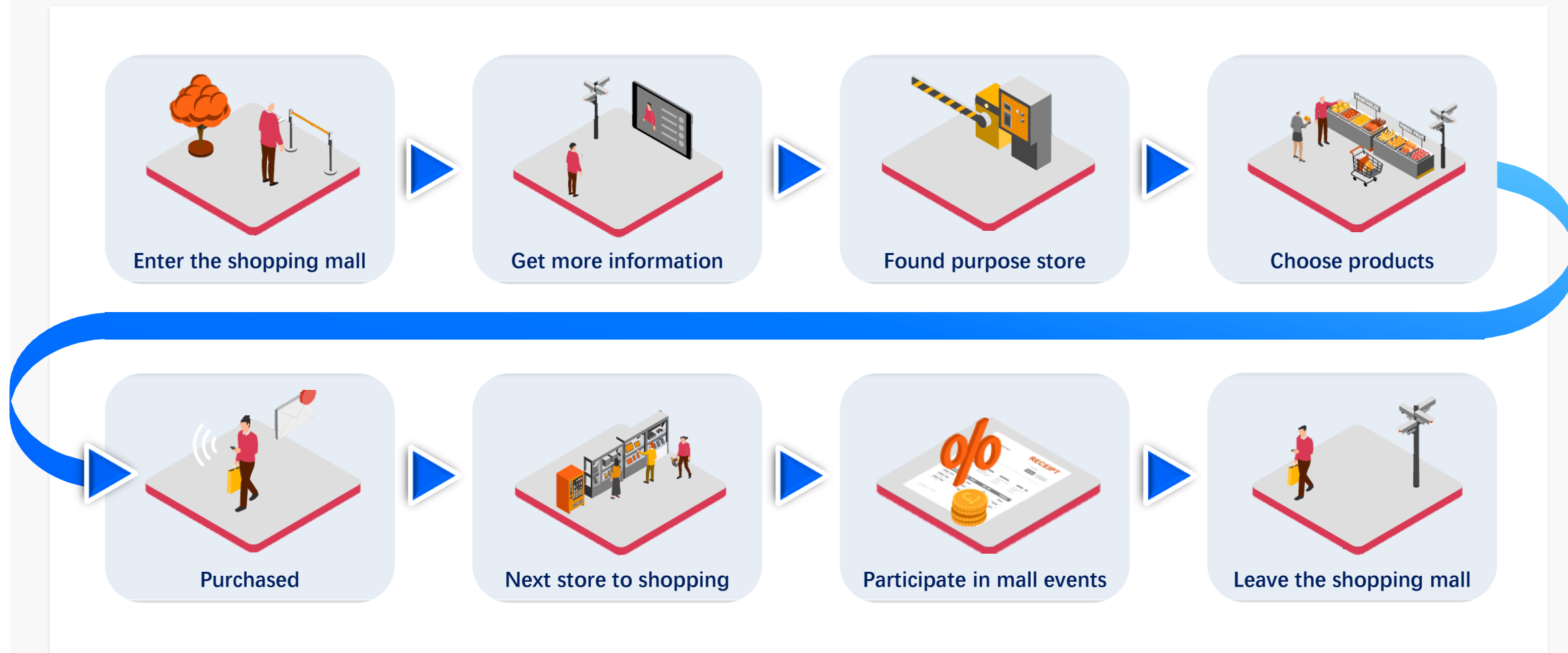
## The frequency of different shopping experience

■ Never ■ Rarely ■ Occasionally ■ Frequently ■ Almost always



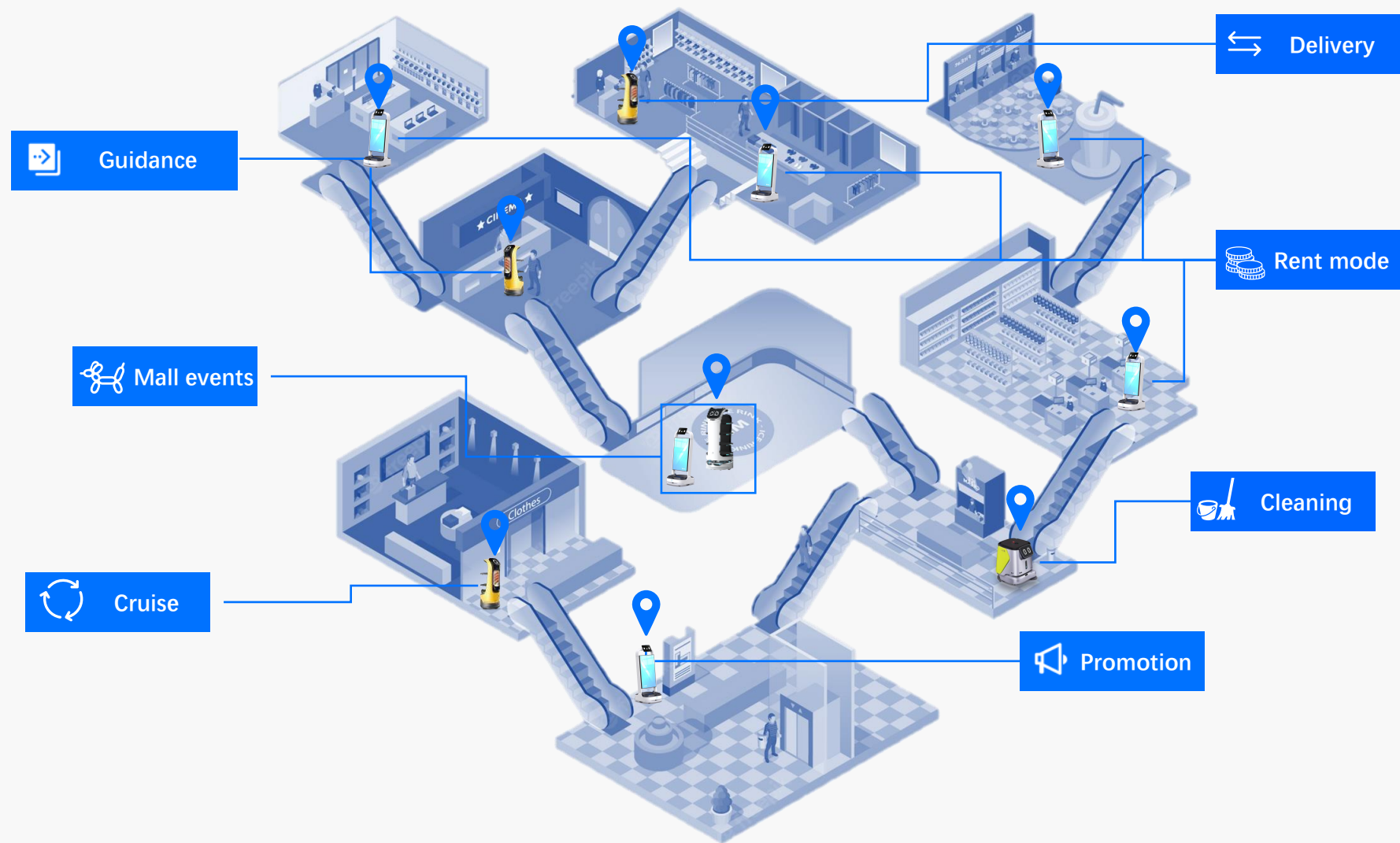
Source: PwC's February 2023 Global Consumer Insights Pulse Survey

# Consumer shopping mall Experience Process





# Intelligent end-to-end Business Process





# Promotion : Get more information

## New and Innovative Store Marketing Methods

The large mobile advertising screen provides a broader, more frequent, eye-catching, and precise marketing method for stores, allowing the store's brand, promotional activities, special products, etc., to reach more customers and further improve the conversion rate of marketing campaigns.



# Promotion : Get more information

## Enhancing Consumer Experience Differentiation and Promoting Customer Flow Conversion Quickly

With more eye-catching and novel ways of attracting customers, smarter and more thoughtful advertisement , and more convenient product access, customers can enjoy a completely new store experience, which quickly enhances the store's differentiation and competitiveness, and leads to faster customer flow conversion.

### Ketty 18.5" Ads screen, variety promotion

#### Promotion more accuracy



- Utilizing intelligent LCD screens to attract customers from all angles
- Large advertising screens better fitting the customer's perspective
- Combining with speakers to significantly attract family-style customers
- Supporting multiple scenarios, allowing for customizable media size and content
- Supporting various types of media, such as audio, video, images, and links

Weight	38KG
Charging time	4.5H (support self-charging)
Battery life	> 8H
Speed	0.5-1.2m/s

### PUDU2 32" Capacitive touch advertising screen

#### The interaction is diversified










- Seamlessly integrated mobile robots with advertising screens
- Display a variety of videos and showcase promotional content in real time.
- Indoor mobile advertising machine can bring message directly to target audience
- Product promotion, brand promotion, and marketing display, easily achieve marketing objectives

Weight	39KG (PUDU2) +13KG (AD Screen)
Charging time	8H
DPI	1920*1080
AD Screen power supply	Via robot charging port



## Promotion : Get more information

	Mobile advertising screen robot	Traditional fixed advertising screen
 Attractive ability	Make a profound impact through mobile+technology	Mainly graphic and lacking creativity, easy to forget
 Easy Use	easy edition of Ads on merchant management platform	Manual replacement requires manual participation, which is time& labor consuming
 Coverage	Supports mobility, with no fixed coverage limits	The general coverage area is within the range of 0-5m
 Product cost	Only one-time purchase cost	Cost increases linearly with update frequency
 Effective contact cost	1.11CNY/person	1.80CNY/person
 Promotion commission	0	Typically around 2% of gross profit margin
 Comprehensive operating costs	1000CNY /Mon	5000CNY /Mon

82

Number of human-robot interactions  
per robot per day

2.85

Average daily running distance  
2.85km per robot

1000

recognizes 550 people on a daily basis, and over 1000 people are covered by weekend advertisements per robot

22375

Exposure area of mobile advertising is over 22375m2 per robot per day

PS :data analysis based on China market



## Guidance : Guide to purpose store

Know what you want → Arrive where you want, one-stop precision shopping



### Quickly & Efficiently

Solve traditional time issue for customer  
Improve customers shopping in-store experience

By searching words or clicking pictures, customers can easily get the information ,and may look for the items with the location they need, then KettyBot will guide them to pick up point.

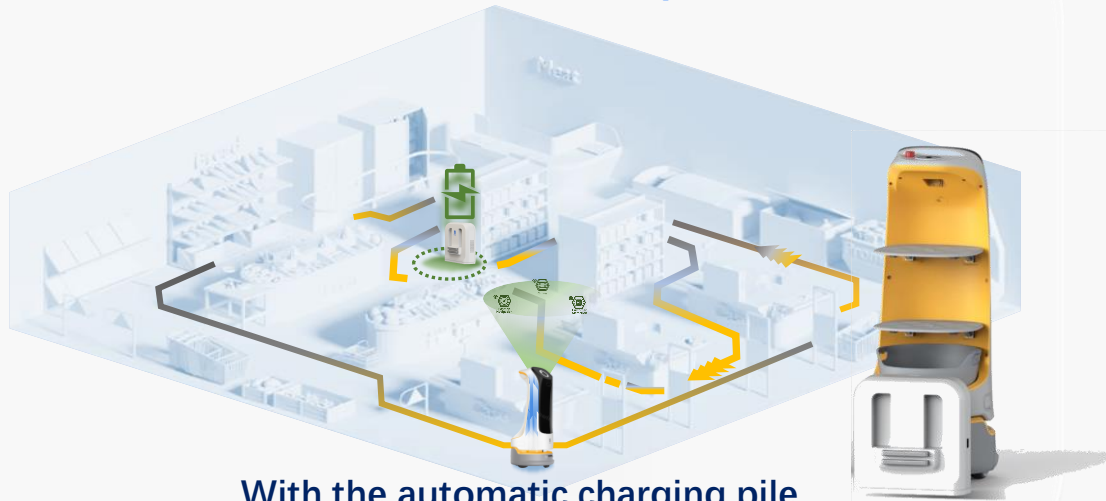
## Cruise : 7\*24 hours time schedule Precise advertising

Schedule robot 24 hours tasks in advance.



The robot will automatically switch operating modes & display mobile ads according to demands of different time periods and position in the operation of malls, which extending marketing reach to every corner Play designated advertisements at different points to make the brand more influential .

7\*24 hours non-stop work



With the automatic charging pile, the robot can work continuously for 7 \* 24 hours

Precise advertising based on location



Robot Task Settings on Pudu Merchant platform

## Cleaning : Automated crossing-floors cleaning



An intelligent IoT system makes it easy to connect **elevators**、**turnstiles**、**entrance guards** , etc. , enabling automatic elevator and entrance guard access, auto-calling of elevators, crossing-floors cleaning and autonomous return trips.

Solve crossing-floors cleaning issues , combine with charge station and work station , Realize 24H fully unmanned operation, and greatly improve the utilization rate of robots in shopping mall scenes, maximize the efficiency of cleaning robots.

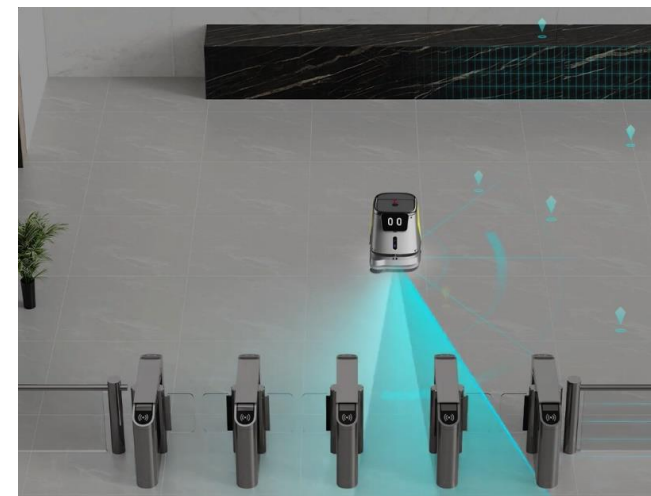
**Elevator**



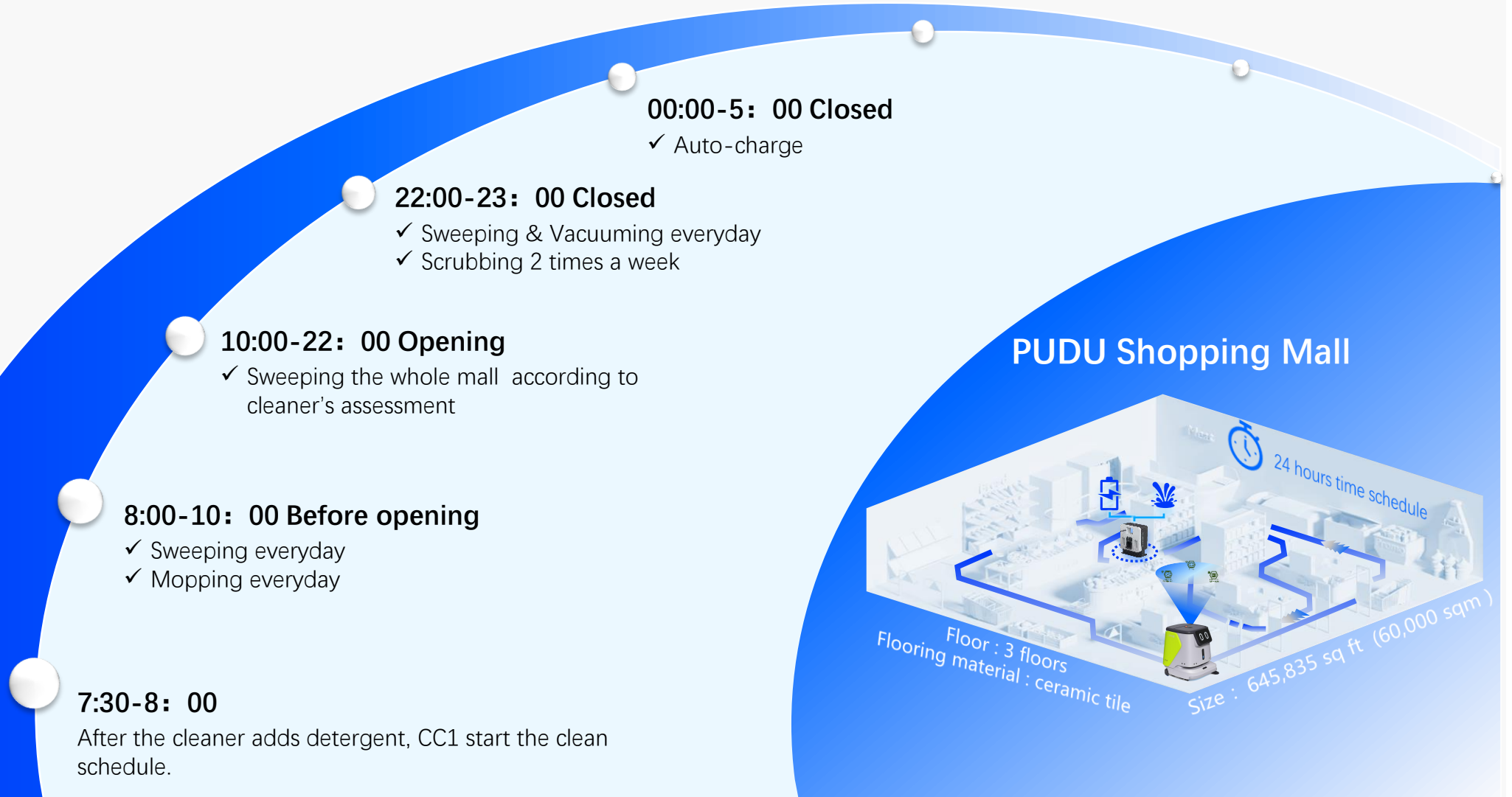
**Entrance guard**



**Turnstile**



# Cleaning : Man-Robot cooperation , more efficiency

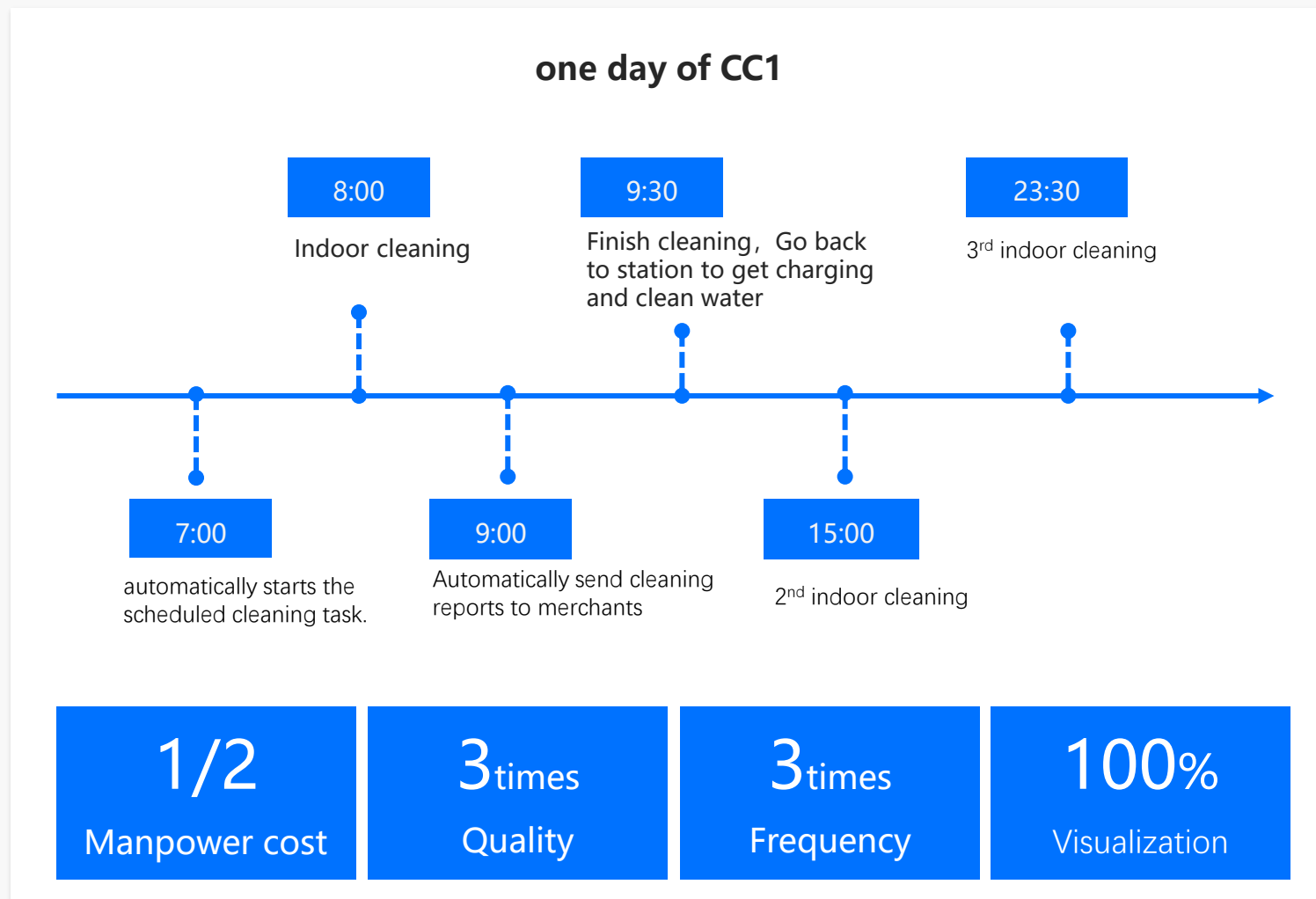




## Cleaning : 7\*24 hours task schedule , fully automatic



- ✓ Save manpower、time、 money
- ✓ One machine, multiple cleaning modes, suitable for multiple scenarios.
- ✓ 24-hour operation, fully automatic
- ✓ Simple, user-friendly, reliable, and stable
- ✓ Check the machine status at any time
- ✓ Presentation of cleaning reports



# Cleaning : Automated crossing-floors cleaning

## Digital Platform

Real-time synchronization of cleaning data, display of cleaning duration, area, etc., self-generated cleaning reports, and clear cleaning results



# Marketing activities

Deep participate in all kinds of marketing activities

## Lucky draw mode

When the shopping center holds various activities, BellaBot can provide a lucky draw mode, and customers can deeply participate in the activity through touch interaction with BellaBot, which will increase the attraction and fun of the activity .



### Sales Activities



### Festival Activities



### Entertainment Activity



# Special scenario : Development a new profits mode

Robots rent mode bring shopping malls more revenue



Shopping mall

Rents robots to various brands which settled in this shopping mall



Merchant

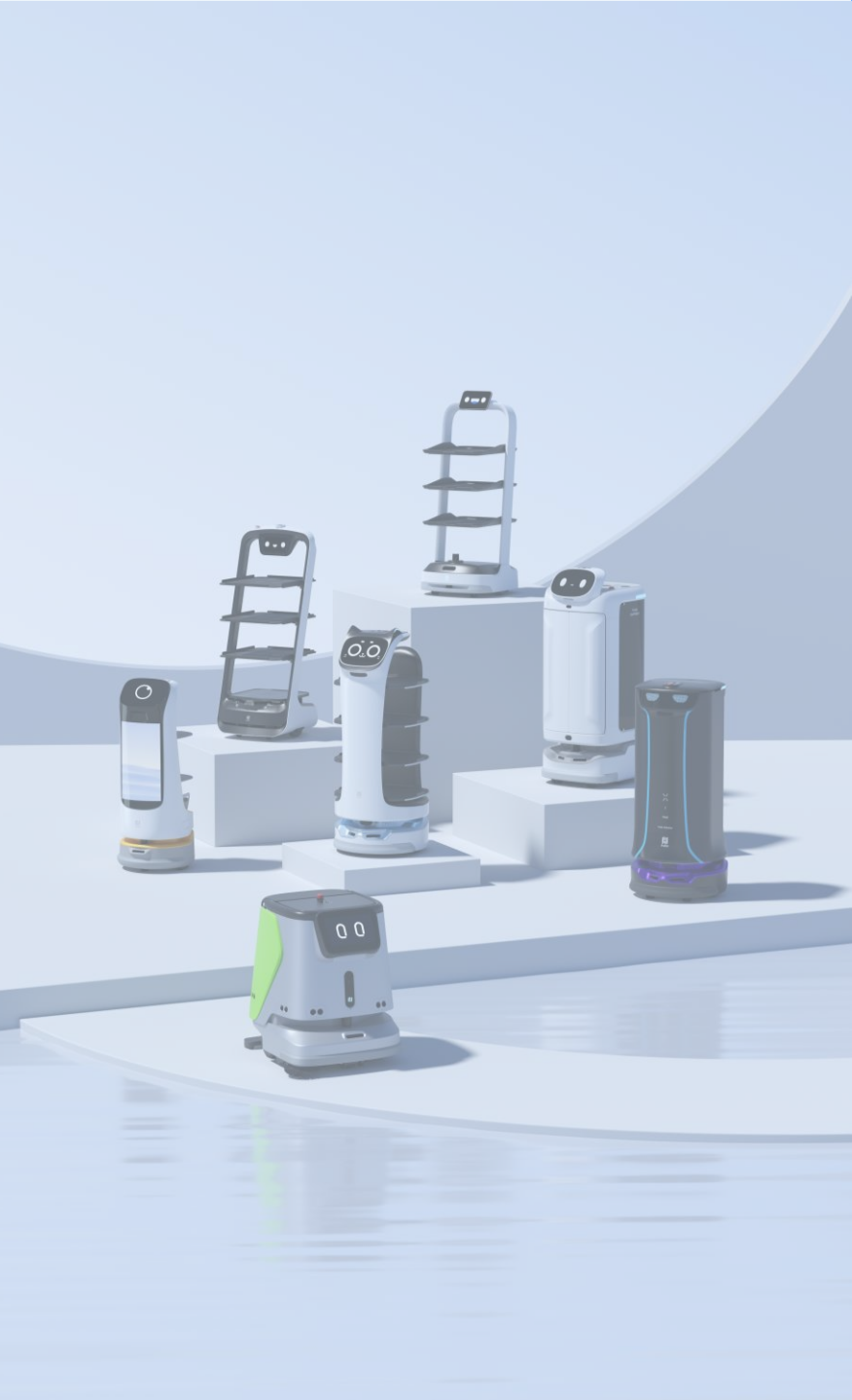
**300 \$**

Recommend average rent price per month



**3000 \$**

Average income from shopping malls which rent 10 robots per month



02

## Successful Cases





# Value Summary

## A differentiated experience to attract more customers

KettyBot redefines customer experience with an eye-catching way to attract customers and a smart, thoughtful way to serve them

## Lower training and management costs

simple operation and user-friendly interface, set up and use in hours with minimal training

## Manpower shortage is no longer a problem

Multiple delivery mode can well assist stores in completing tasks such as demo delivery, and delivering snacks, which will free up human workers from dull and duplicate tasks.

## Robot-human collaboration to improve service and efficiency

Human workers collaborate with KettyBot in away that they can both do what they are best at. KettyBot is ready to assist and improve humankind working experience.

## Simplify your cleaning processes

improve your workflow, pre-set program enables CC1 to start operating automatically and immediately with stable cleaning efficiency and higher quality of cleaning

## Unified management & IoT platform

Users can manage different models of Pudu robots simultaneously and analyze the operation of the robots through Pudu management platform.

## Successful Cases – Al Othaim Mall



**Location:** Riyadh Governorate \ Ar Rabwah - Eastern Ring Branch Road , Saudi Arabia.

**Industry:** Tourism & Hospitality .

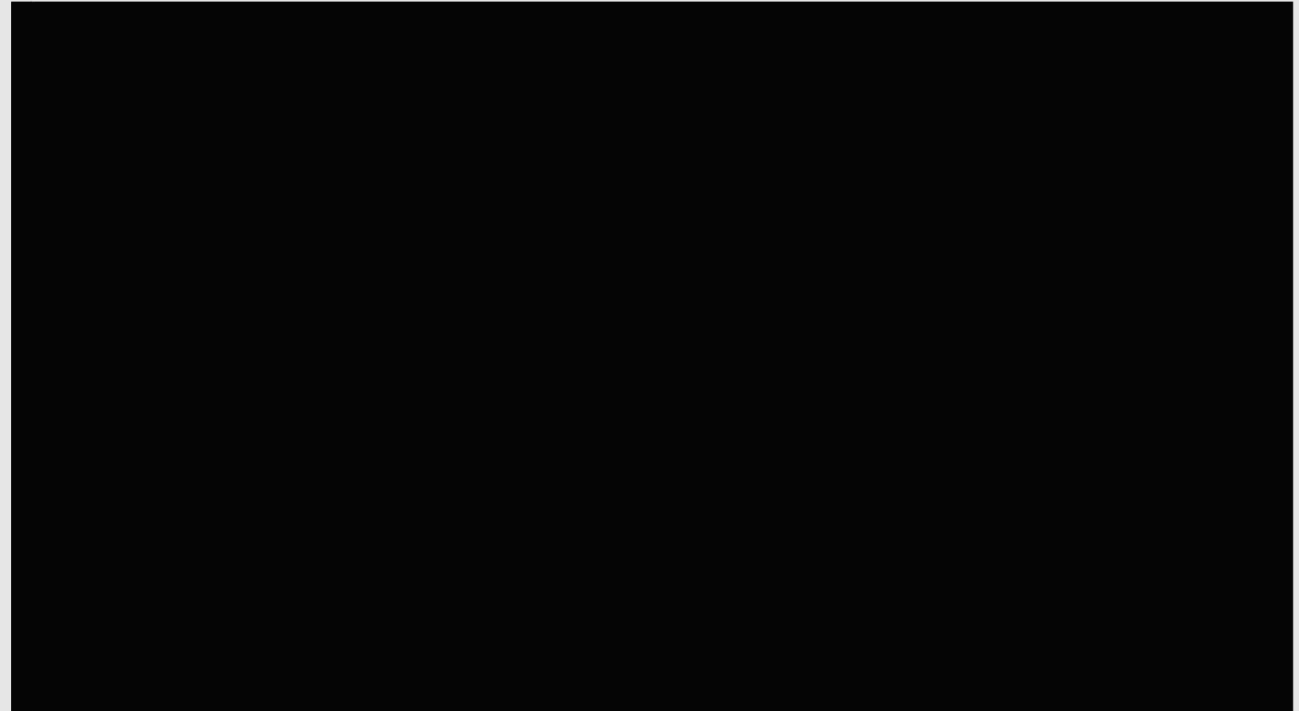
**Business hours:** 10:00-23:00.

Floors :  
3 levels

Ceiling height :  
13.4-17 ft( 4.2-5.2 m )

Size : 667,262 sq ft  
(62,000 sqm )

Settled stores :  
392 stores



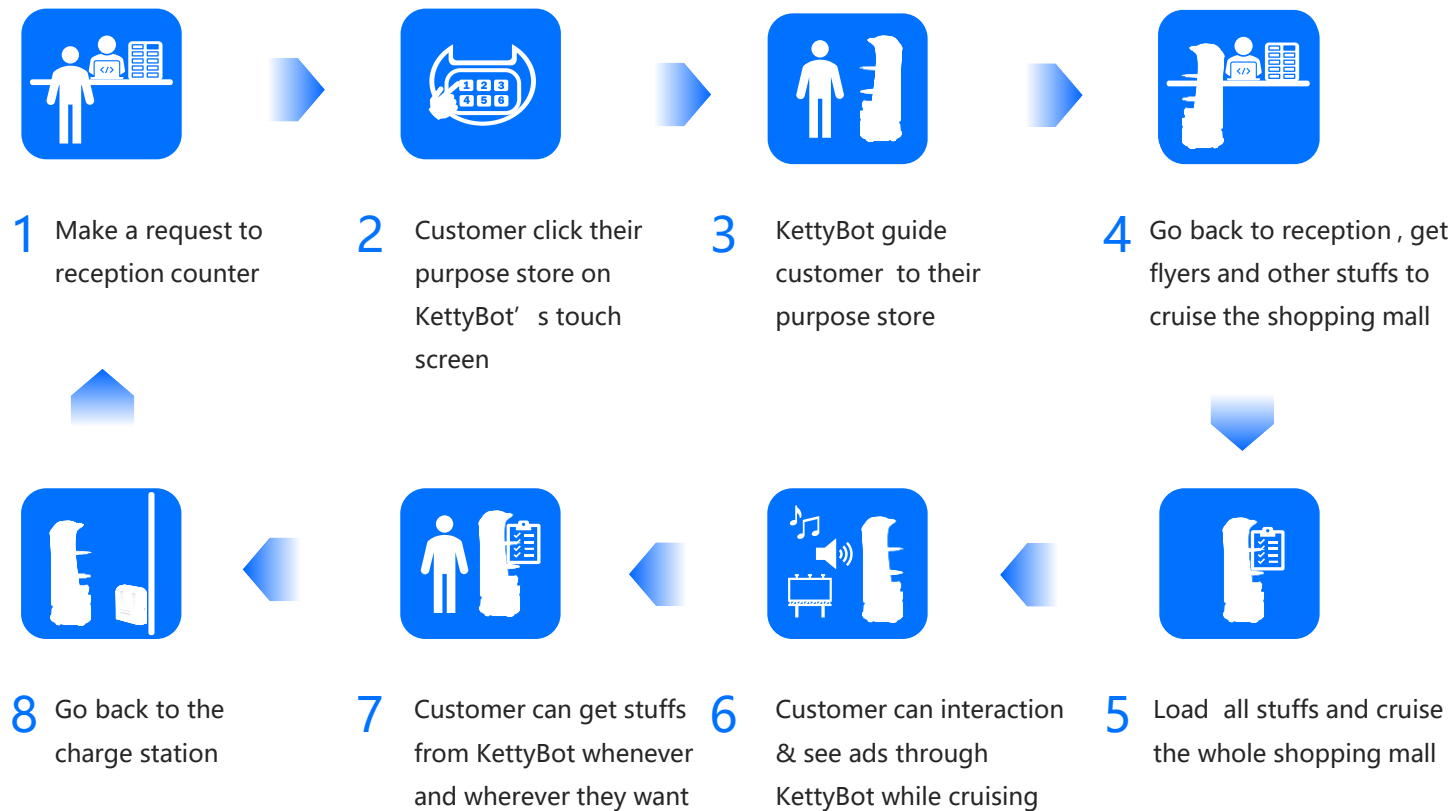
URL: <https://www.youtube.com/watch?v=h6ZaGa8buC4>

\* Relevant statistics as of December 2022



# Successful Cases - Al Othaim Mall

## Process



## Configuration

Item	QTY
Base station	1
Battery charger	1
KettyBot (Promotion & Guidance & Cruise )	1



\* Relevant statistics as of December 2022

## Successful Cases - Al Othaim Mall

### Promotion data

- ◆ Broadcast ads **33.92 hours** per month
- ◆ Broadcast ads **24253 times** per month
- ◆ Broadcast **28 activities & 72 special products** per month

### Guidance data

- ◆ Guide **1128 people** per month
- ◆ Guide **144.16 km** per month
- ◆ Guide **70.06 hours** per month

### Attraction data

- ◆ Attract **1338 people** to interaction with KettyBot by touch per month
- ◆ Say hello & voice interact over **155 times** per month
- ◆ Attraction ran **13.13 hours** per month
- ◆ Attract **1552 people** to enter the shopping mall per month
- ◆ Interact with **779 people** per month

\* Relevant statistics as of May 2023

## Successful Cases - AI Othaim Mall

KettyBot has become a symbol of "Technology & Intelligent" in AI Othaim Mall, this shopping mall are constantly upgrading their new imagine through KettyBot, and also reshaping their pivotal position in new retail and new commerce.

### 01



#### Improve efficiency

According to a report by the International Federation of Robotics, the use of robots can increase efficiency by up to 40%. Freeing up employees to focus on customer service and other tasks.

### 02



#### Enhance shopping experience

55% of consumers would be interested in using robots to help them with their shopping. Robots can provide assistance with navigation, product recommendations, making the shopping experience more convenient and comfortable.

### 03



#### Lead technological trend

The use of robots in the shopping mall sector is a growing trend, and shopping mall who embrace this technology can set themselves apart from competitors. Get more consumer favor by using robots.

\* Relevant statistics as of December 2022

## Successful Cases – Sunway Velocity Mall

### **SUNWAY<sup>®</sup>** **VELOCITY MALL**

**Location:** Lingkaran SV, Sunway Velocity,  
55100 Kuala Lumpur, Malaysia

**Industry:** Tourism & Hospitality

**Precincts:** Market Place 、 Food Street Food 、  
Commune

**Business hours:** 10:00-22:00.

Floors :  
7 levels

Ceiling height :  
13.4-17 ft( 4.2-5.2 m )

Size : 1,400,000 sq ft  
( 130,065 sqm)

Settled stores :  
Over 500 stores

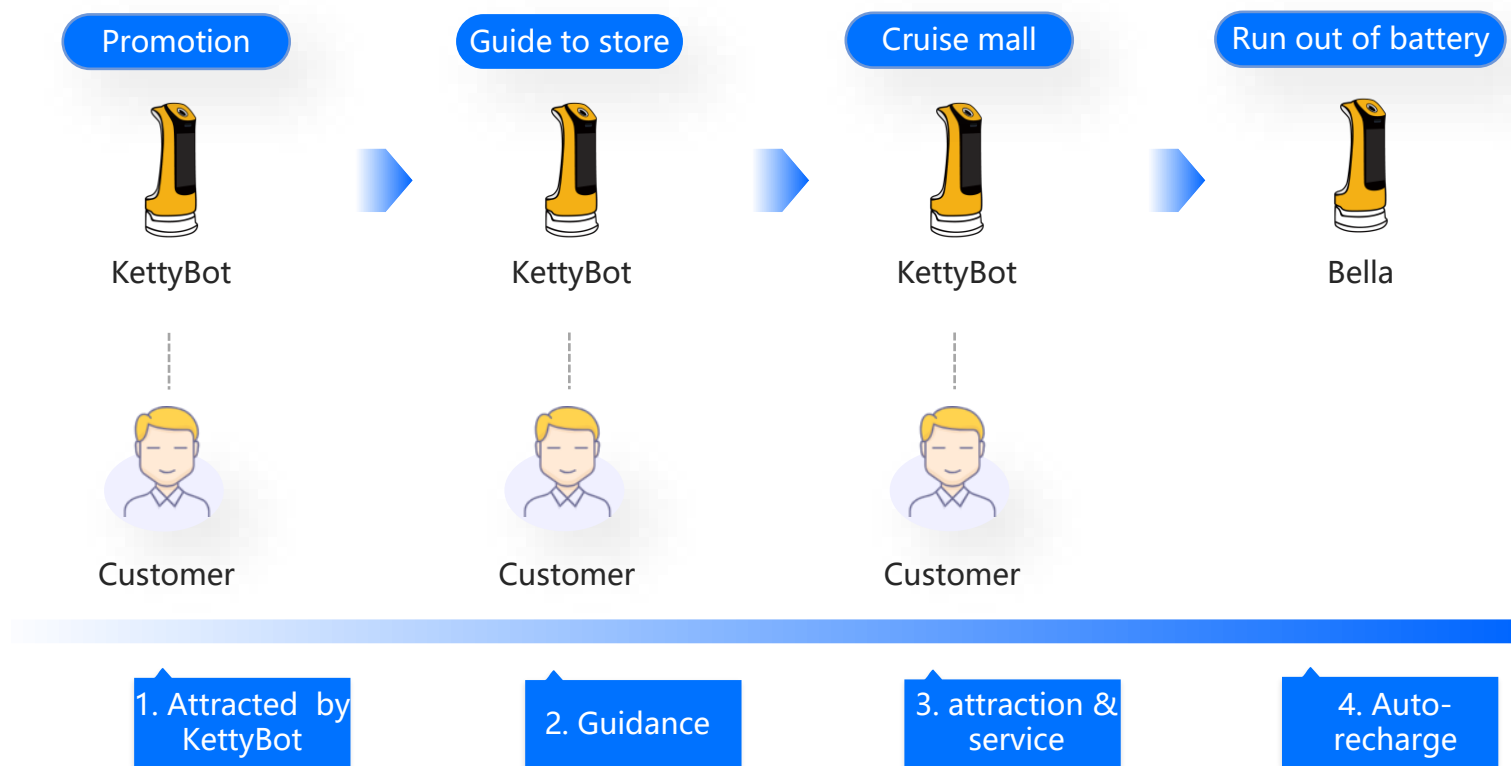


URL: <https://www.facebook.com/SunwayVelocityMall/videos/723174179226011>

\* Relevant statistics as of December 2022

# Successful Cases - Sunway Velocity Mall

## Process



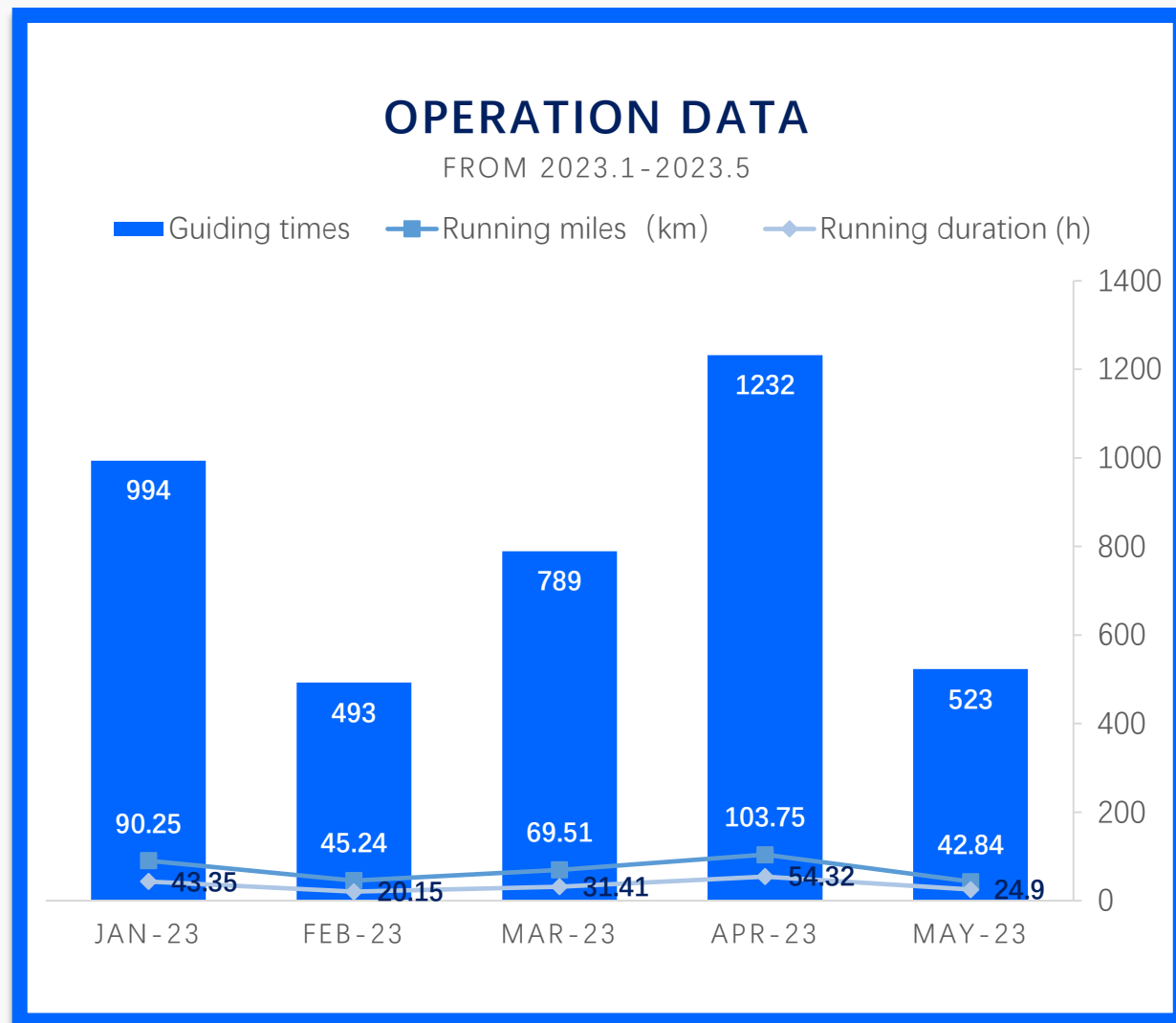
## Configuration

Item	QTY
Base station	2
Battery charger	2
KettyBot (Promotion & Guidance & Cruise )	2

**SUNWAY<sup>®</sup>**  
**VELOCITY MALL**

\* Relevant statistics as of December 2022

## Successful Cases - Sunway Velocity Mall



In the past 5 months , KettyBot has helped the mall's staff solve more than 4,000 guidance problems, enhancing the shopping experience for customers ,

**807** times per month

**70.318** km per month

**35** hours per month

\* Relevant statistics as of December 2022



# Successful Cases - Sunway Velocity Mall

The combination of 3rd party table positioning system with Pudu delivery robot solution is coordinated and operated by restaurant staff, and no telecommunication required between the two independent systems with high reliability

## More helpful

- ✓ Daily average operating distance **2.5 km** per robot
- ✓ Guidance high up **800+** times per month

## Precision

- ✓ Broadcast ads precisely according to the current position .
- ✓ Ketty show the way where consumer want, which reduce **30%** time wasting

## Easy

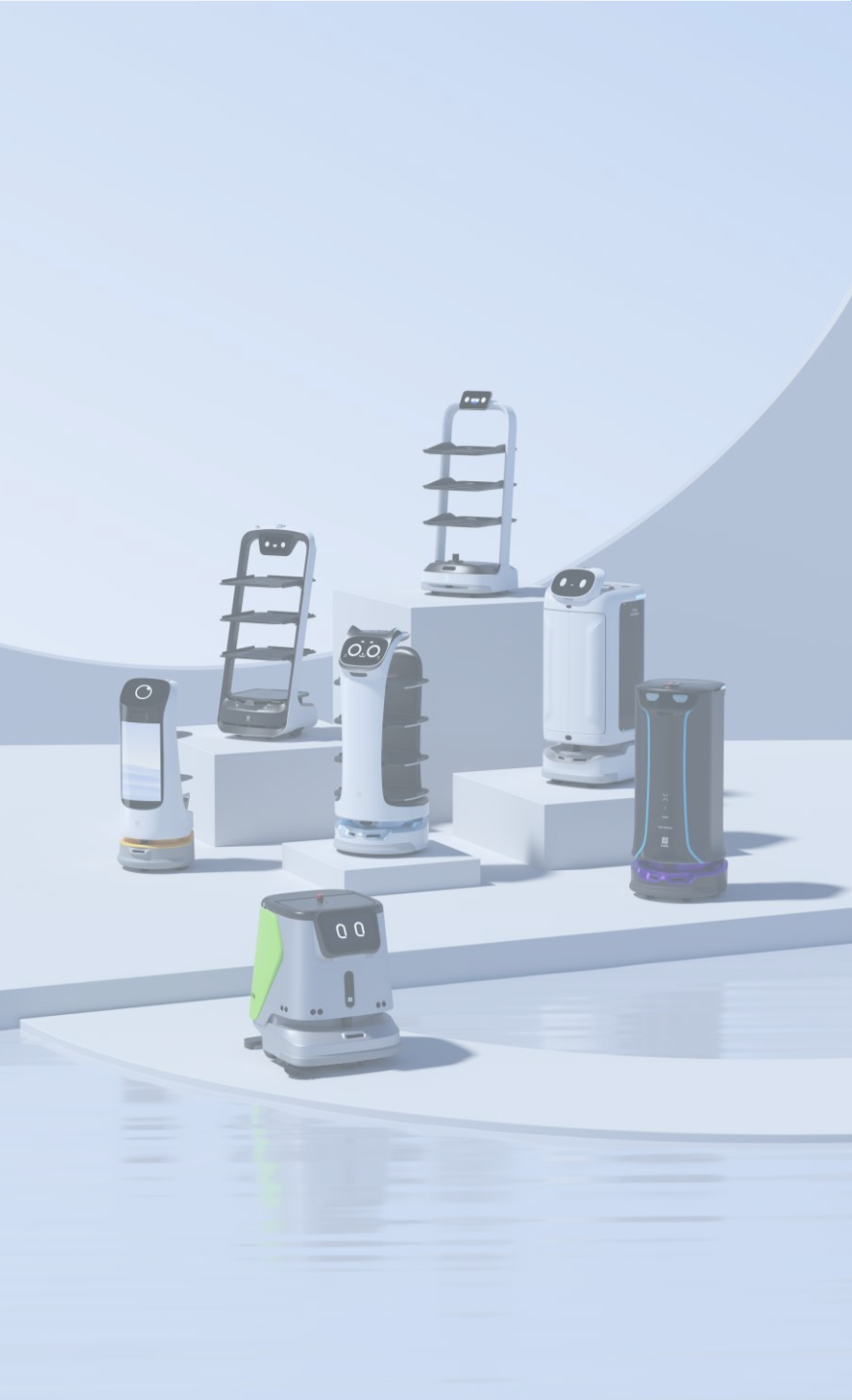
- ✓ Easy deployment
- ✓ No need to change to the original working procedure

## Technology

- ✓ Funny experience created by participating in the use of an intelligent robot
- ✓ Experience the convenience and efficiency

\* Relevant statistics as of December 2022





03

# 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



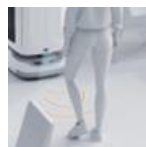
Feature settings

# Delivery Robots

## SwiftBot



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



Avoidance Reminder



Operating Status Projection



Atmosphere Projection

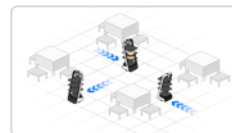


Foot-activated Door Projection

## PuduBot



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



Scheduling



3D avoidance



Independent Suspension



Ultra-long Endurance



Optimal Path Planning



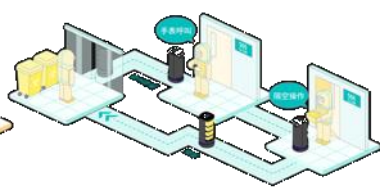
Sun-resistant

## 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



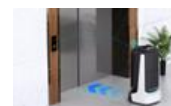
APP call



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



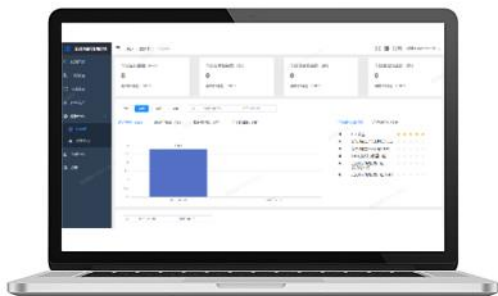
## PUDU SH1

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



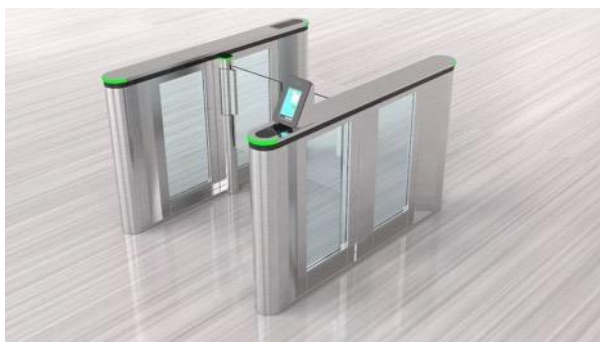
4G/Lora Watch



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

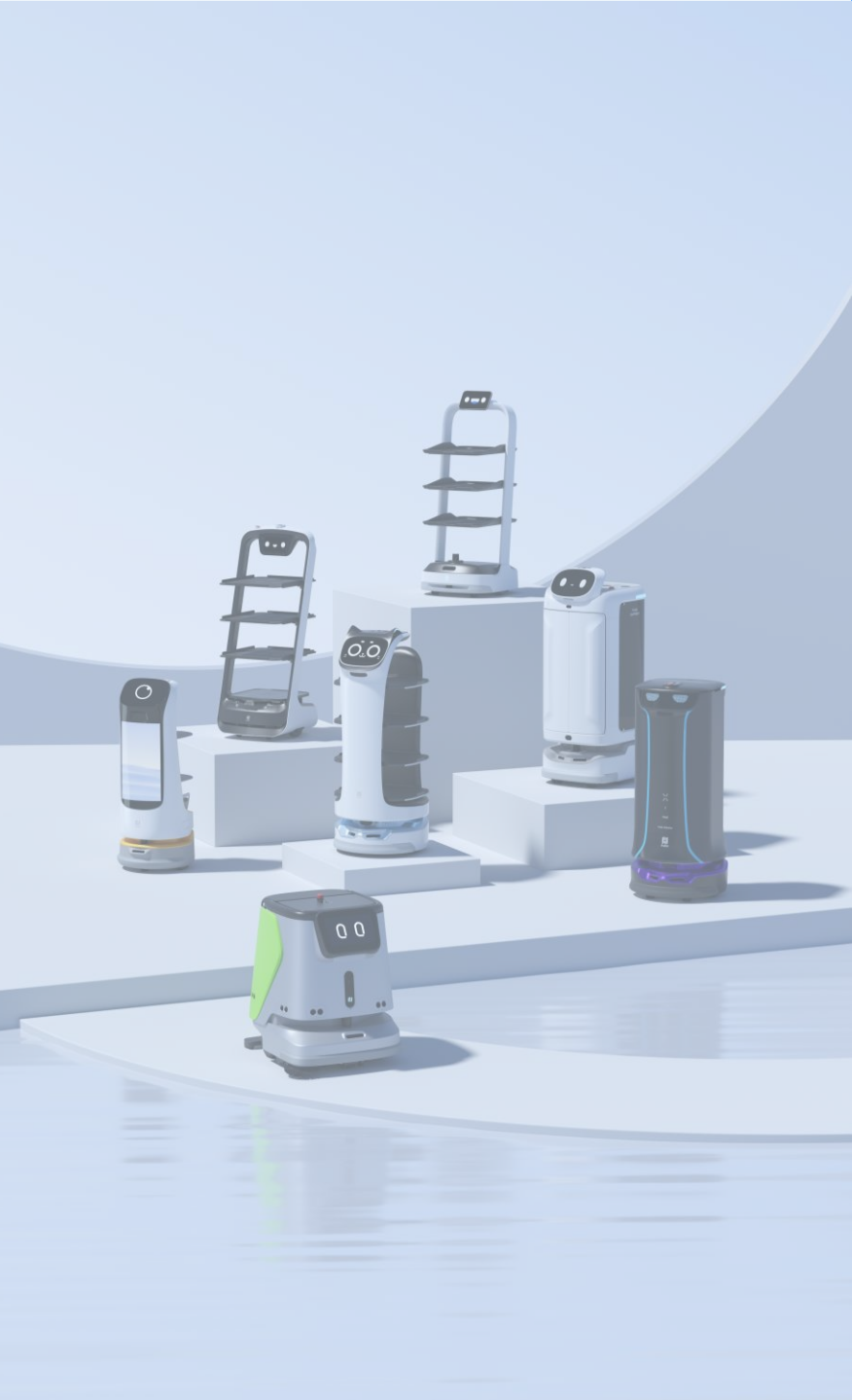


Customized Software



Combined with 3<sup>rd</sup> party  
hardware

More options to come  
soon



04

# 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 56,000 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 December 2022

### 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



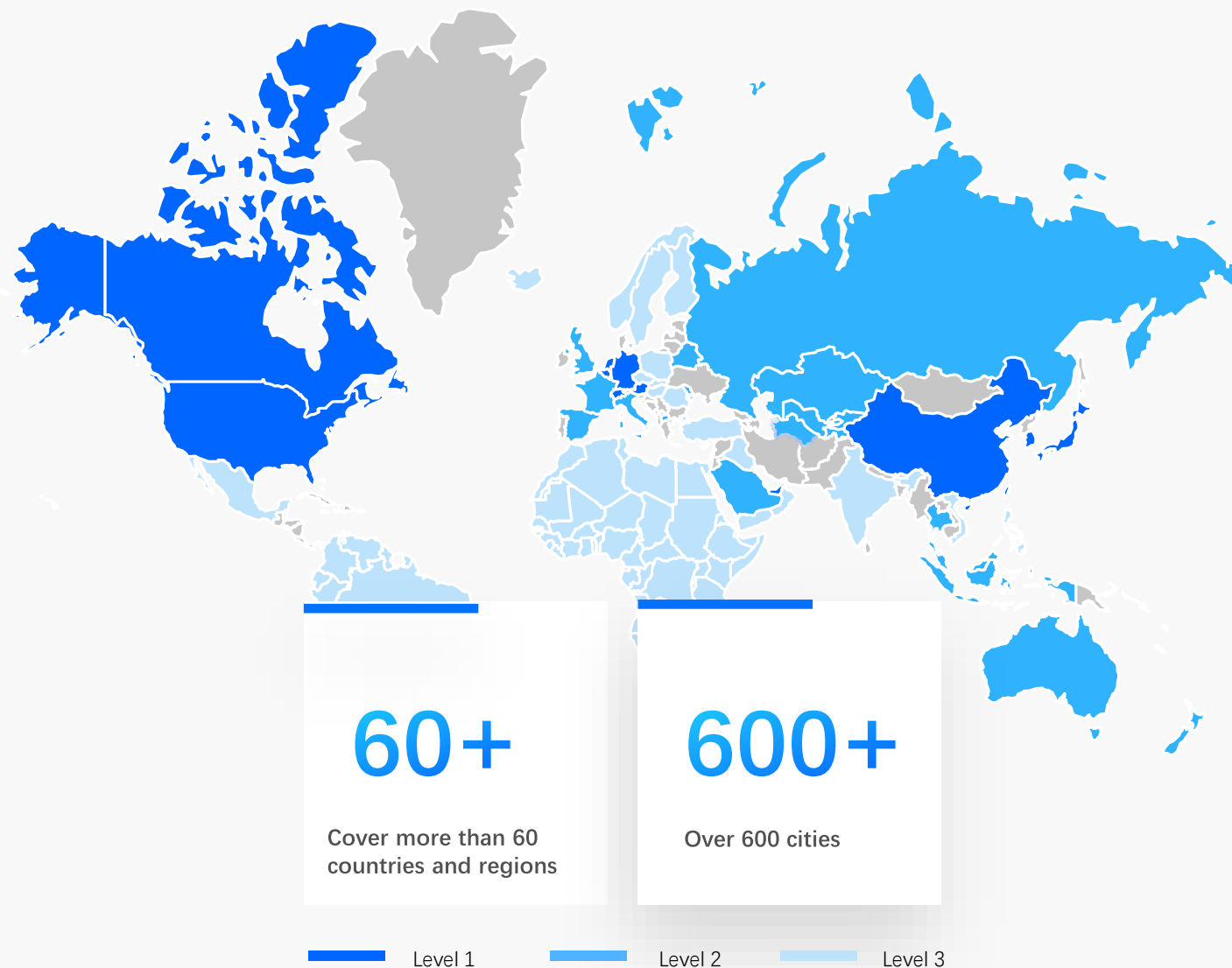
EMBRACING  
CHANGE

# 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 December 2022





# Scale Advantage

Total Sales Quantity

## 56,000+

56,000+ \* 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

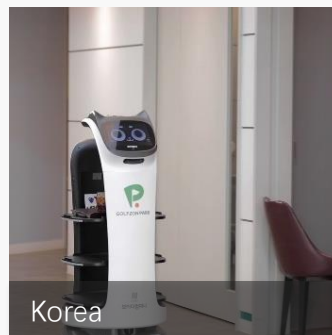
Market Share of the Overseas Catering Industry

## >80%

Overseas catering industry's market share > 80%

\* Relevant statistics as of December 2022

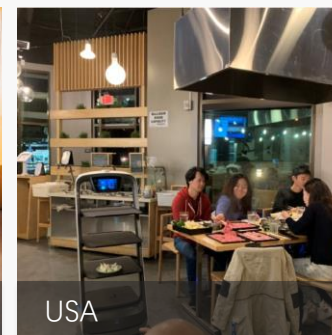
## The world largest commercial service robot manufacturer



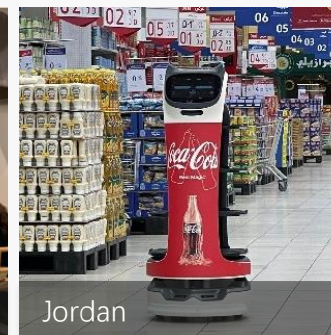
Korea



Australia



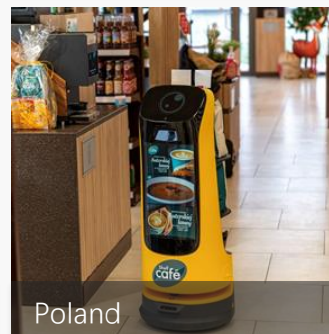
USA



Jordan



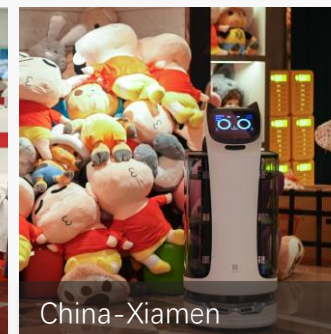
Switzerland



Poland



China-Shenzhen



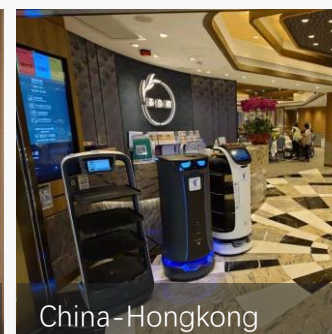
China-Xiamen



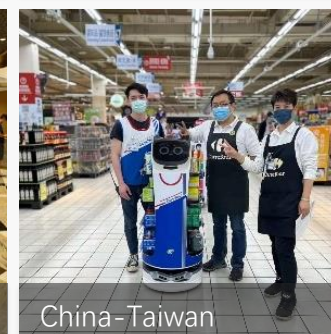
Malaysia



Japan



China-Hongkong



China-Taiwan



# Horner and Certification

## Certificate & Patent

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



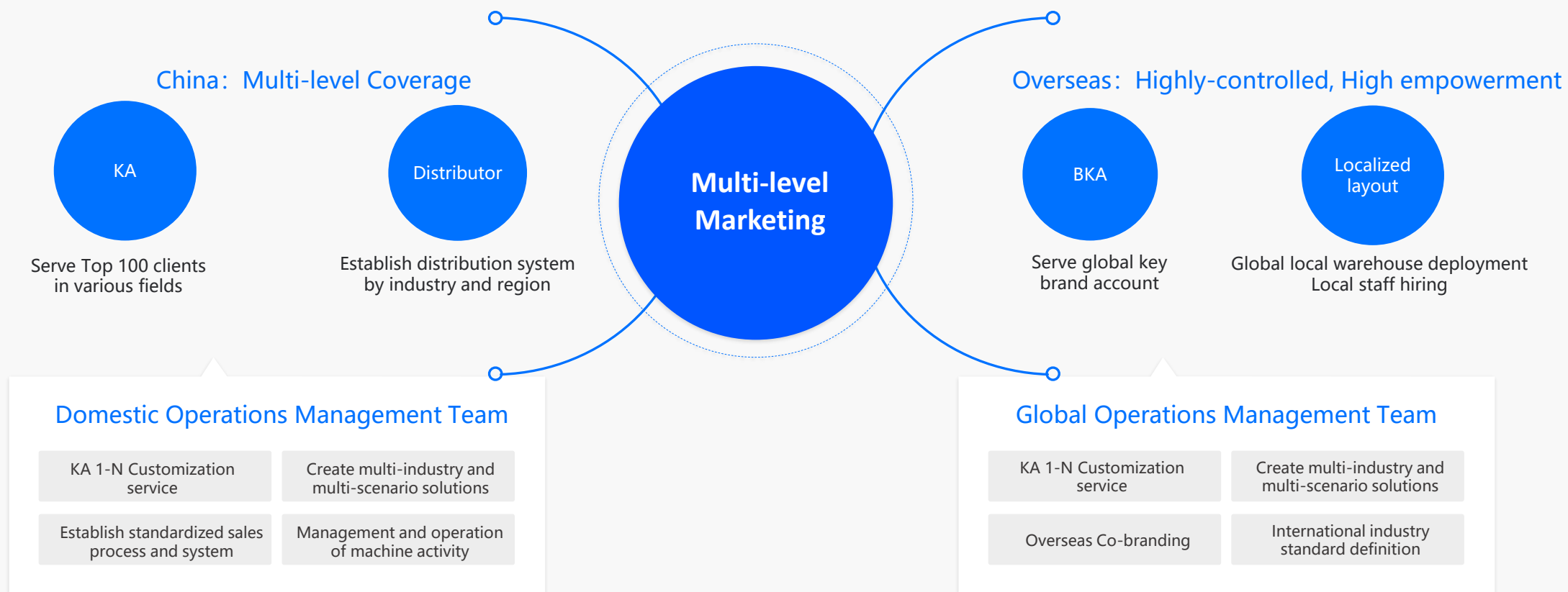
Pudu Robotics has applied for about 1300\* core patents, of which invention patents are over 60%, involving positioning, navigation, motion control, human-computer interaction, robotics arm, servo motor, computer vision, cloud platform and other technical fields.

\* Relevant statistics as of December 2022



# Operation Advantage

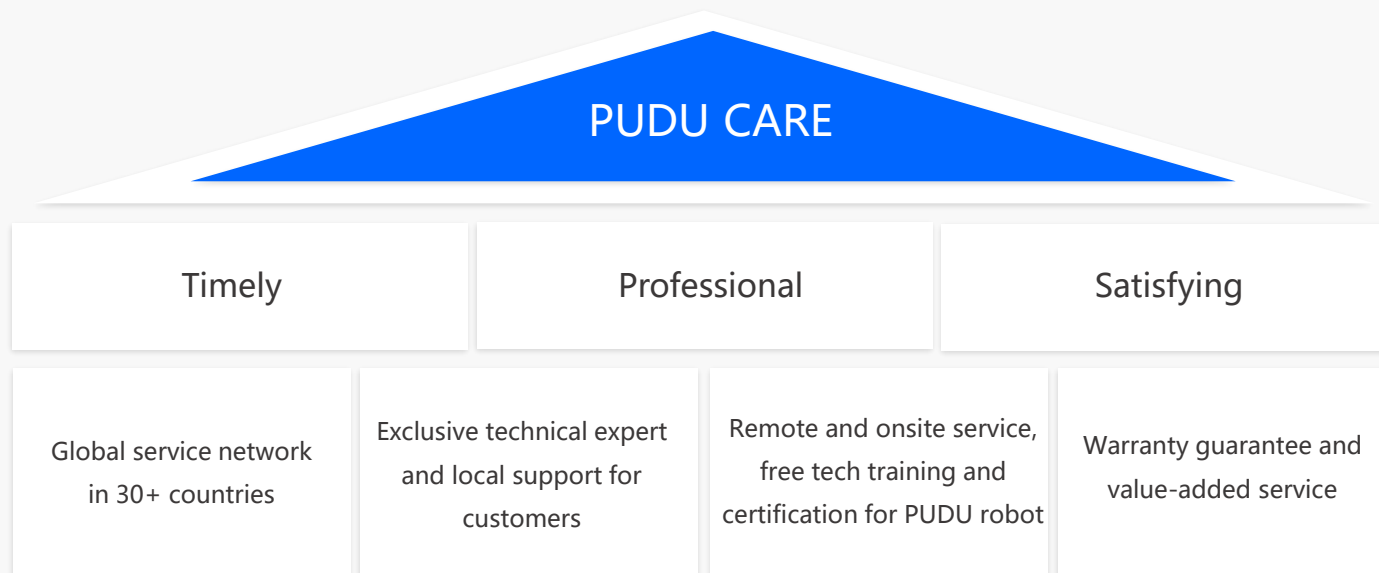
## Global Multi-level Sales System



# 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!



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