

LAST-MILE LOGISTICS IN CHINA

A package of improvements set for delivery

September 2023

Greater China Research

LAST-MILE IN CHINA

CONTENTS

- 04** **Executive summary**
- 05** **Introduction**
- 06** **The current and future parcel delivery market in China**
- 09** **What can China do to further improve?**
 - Distribution facility improvements
 - Tracking improvements
 - Delivery improvements
 - Collection point improvements

LOGISTICS CHINA

- 25** Key takeaways
- 26** Business contacts
- 28** Research contacts

A yellow and black autonomous mobile robot (AMR) is shown in a warehouse environment. The robot has a yellow upper body and a black lower body with wheels. It is positioned on a grey concrete floor. In the background, there are metal shelving units and a large window with a grid pattern. The lighting is bright, coming from the window.

EXECUTIVE SUMMARY

Overall, smart last-mile logistics in the Chinese market has led to an improvement in the efficiency and execution of last-mile delivery in the country. In fact, the general strength, the overall development level and, in particular, the application of digital technology in China has also led to a benchmarking effect on a global scale.

Globally and in China, growth in last-mile delivery logistics has been robust over recent years with the growth in ecommerce being a significant driver of last-mile delivery logistics growth.

In 2022, China's ecommerce transaction volume reached RMB 43.83 trillion, growth of 3.5% on a year-on-year (y-o-y) basis after 19.6% growth the previous year.

As ecommerce has grown in China, so has the parcel delivery business in the country. In 2022, when considering the business scale within China's parcel delivery industry, it can be seen that a record high was reached. The parcel delivery business volume was 110.58 billion packages, up by 2.1% y-o-y off the back of an annual growth rate for the previous year of 29.9%.

Given the growth in ecommerce and subsequently the parcel delivery business in China, so last-mile delivery logistics in China needs to continually find ways to further improve to continually keep up with the times and to continually provide an even better customer service experience. There are many ways to improve, but four key areas to look at are last-mile:

- Distribution facilities;
- Tracking;
- Delivery, and;
- Collection points.

Ahead, the last-mile delivery logistics market in China needs to continue to consider its market characteristics, the local consumer mindset and other factors to continue to effectively apply technology to business scenarios to keep costs down while at the same time helping local markets provide the best last-mile logistics and delivery solutions to the customer.

INTRODUCTION

Globally and in China, growth in last-mile delivery logistics has been robust over recent years with the growth in ecommerce being a significant driver of last-mile delivery logistics growth. Having said this, its magnitude was not grasped as much as it was in the last two years. With the COVID-19 epidemic and the limitations enacted on movement, (given the swift spread of the virus), last-mile delivery generally came out of the shadows to reveal its importance. More people, including members of the older generation, changed their shopping habits by switching to online ordering, making last-mile delivery central to the ecommerce sector.

Last-mile delivery importance elevation and growth in China are certainly big positives for the industry in the region in general, but there is still no getting away from the costs. Still one of the greatest areas within the general logistics industry globally, and in China, where costs can be further brought down is last-mile delivery. By some estimates, around 40% of general supply chain costs can be directly attributed to last-mile delivery.

Around the globe and in China, extra last-mile delivery costs are often associated with delays and unforeseen expenses. Delays and unforeseen expense can be put down to a number of factors, including:

- The inability to make swift changes to overcome delivery bottlenecks;
- The use of outmoded technology, and;
- Poor communication between various last-mile delivery parties.

How can delivery efficiency and cost margins be further improved when it comes to China's last-mile logistics market in particular? To answer this query, our report takes a look at the current and future parcel delivery market in China before examining some of the further improvements that could be on the horizon and could be made in terms of last-mile delivery distribution facilities, package tracking, package delivery and package collection points.



THE CURRENT AND FUTURE PARCEL DELIVERY MARKET IN CHINA

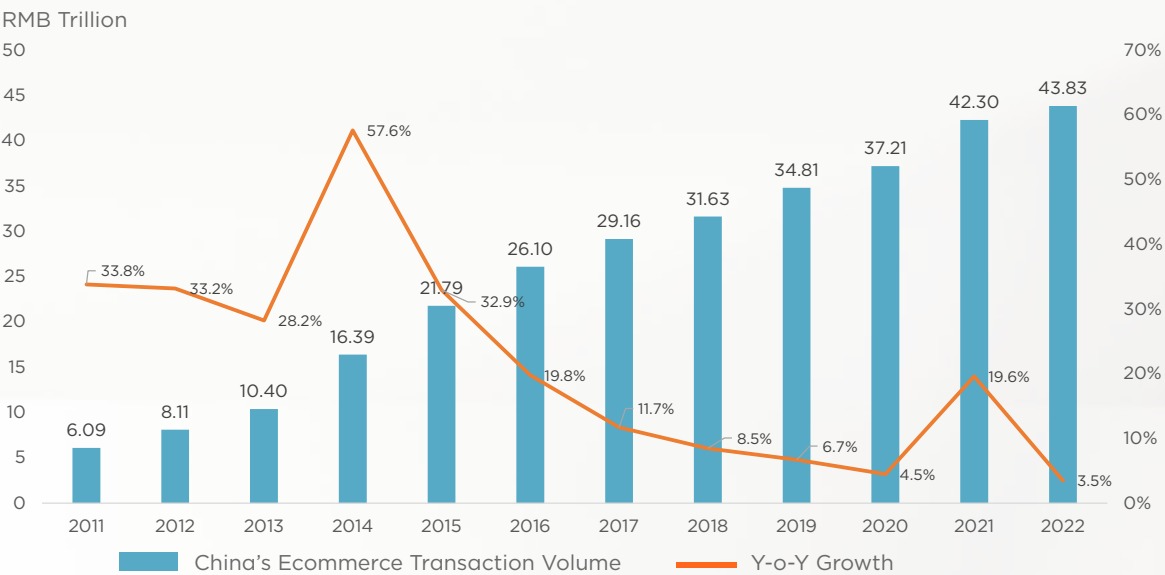
China's general last-mile delivery system and processes are quite unique when compared to other markets globally. In cities in China today there are many small distribution centres. To and from these centres, many small vehicles, be they small delivery vans or delivery scooters, make countless single-day journeys to businesses, to residential communities, to designated smart pick up and drop off points (PUDOs) and to smart self-service delivery locker banks.

China has established this last-mile delivery system out of absolute need. The ecommerce market has been rapidly growing, and logistics enterprises have had to develop fast as well to keep abreast of the change.

In 2022, according to Statista, the number of netizens in China exceeded 900 million with the Internet penetration rate reaching 75.6%. Meanwhile, China's ecommerce transaction volume reached RMB 43.83 trillion, growth of 3.5% on a year-on-year (y-o-y) basis after 9.6% growth the previous year (Figure 1).



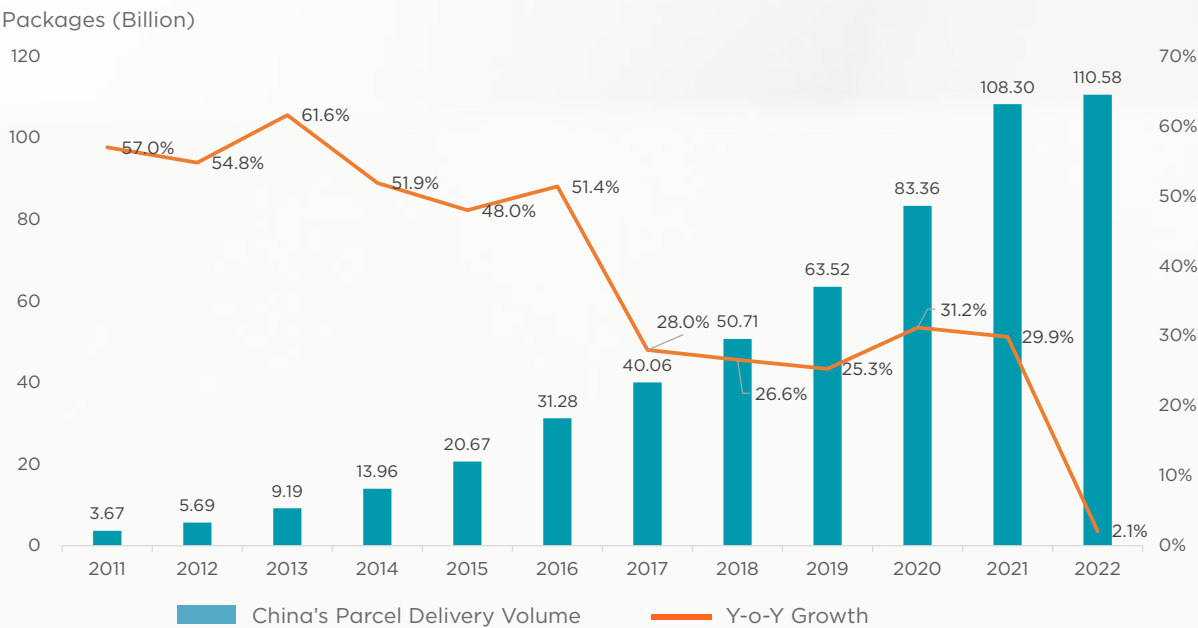
Figure 1: China's ecommerce transaction volume (2011-2022)



Source: National Bureau of Statistics, China, Cushman & Wakefield Research

As e commerce has grown in China, so has the parcel delivery business in the country. In 2022, when considering the business scale within China's parcel delivery industry, it can be seen that a record high was reached. The parcel delivery business volume was 110.58 billion packages, up by 2.1% y-o-y off the back of an annual growth rate for the previous year of 29.9% (Figure 2).

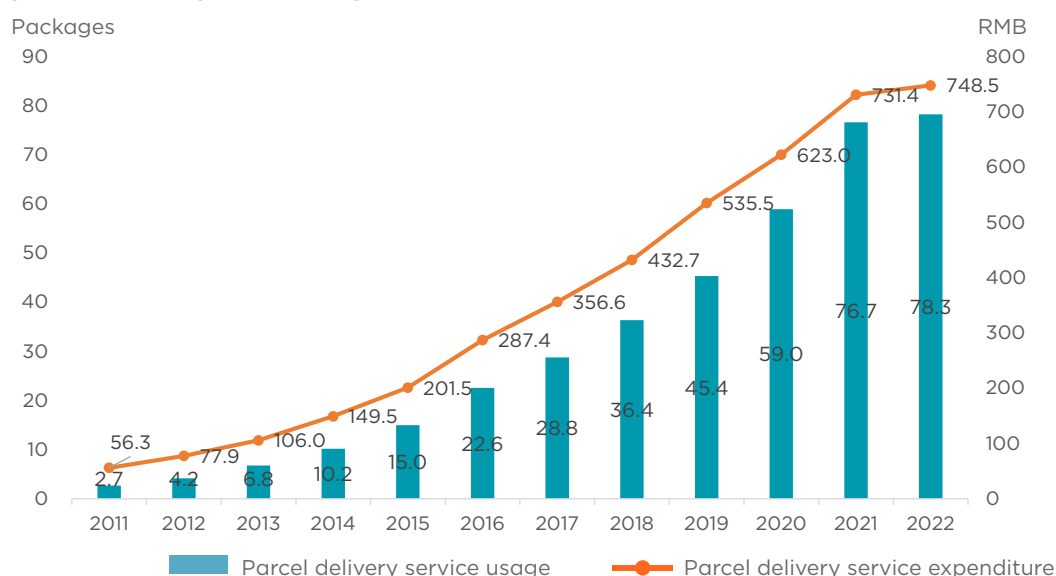
Figure 2: China's parcel delivery volume (2011-2022)



Source: The State Post Bureau of the People's Republic of China, Cushman & Wakefield Research.

What's more, according to analysis of per capita parcel delivery service usage and expenditure, record highs were also reached in 2022. China's per capita parcel delivery service usage in 2022 was 78.3 packages/person, up by 2.1% y-o-y, and 29 times the figure recorded in 2011. The per capita parcel delivery service expenditure in the country in 2022 was RMB 748.5, up by 2.3% on a y-o-y basis, and 13.3 times the figure recorded in 2011 (Figure 3).

Figure 3: China's per capita parcel delivery service usage and per capita parcel delivery service expenditure (2011-2019)



Source: The State Post Bureau of the People's Republic of China, Cushman & Wakefield Research.

The first- and second-tier cities in China are quite mature as markets go. There is not much space for further industry improvement. However, along with the general increase in consumption and the overall retail market expanding in third- and fourth-tier cities and rural areas, courier companies and ecommerce platforms will look to further expand in these markets.

- A China logistics industry representative



WHAT CAN CHINA DO TO FURTHER IMPROVE?

Given the growth in ecommerce and subsequently the parcel delivery business in China, so last-mile delivery logistics in China needs to continually find ways to further improve to continually keep up with the times and to continually provide an even better customer service experience. There are many ways to improve, but four key areas to look at are last-mile:

- Distribution facilities;
- Tracking;
- Delivery, and;
- Collection points.



The concept of the last mile has been around for many years in China, having emerged from the initial stages of ecommerce. Many courier companies and ecommerce companies have invested a lot of money to lay a complete distribution system network, and the consumer experience has been greatly improved. What needs to be considered in the future is to achieve even lower costs while further improving efficiency.

– A China logistics industry representative

Distribution facility improvements

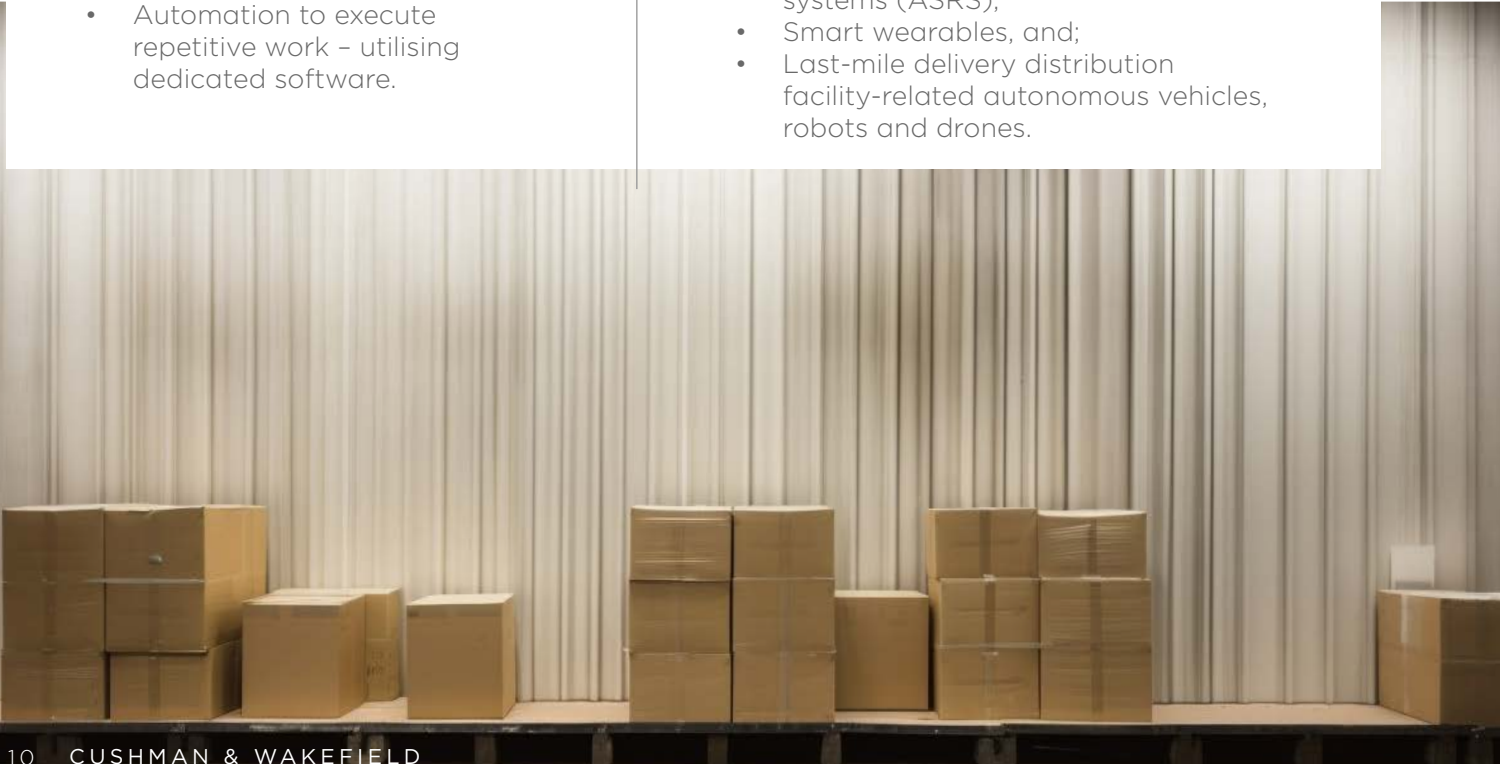
Today, last-mile delivery distribution facilities need to operate efficiently and with as few glitches as possible. To improve, the next step for those last-mile delivery distribution facilities in China, which have not already done so, would be to automate.

Last-mile delivery distribution facility automation largely involves two elements:

- Automation to assist last-mile delivery distribution facility workers – utilising robots/ machines, and;
- Automation to execute repetitive work – utilising dedicated software.

Last-mile delivery distribution facility automation in China has been steadily progressing over recent years, however, the COVID-19 pandemic has spurred rapid adoption due to the greater delivery speed requested by customers. There are many ways for a last-mile delivery distribution facility to automate, including the use of:

- The Internet of Things (IoT);
- Last-mile delivery distribution facility management systems;
- Voice picking;
- Artificial intelligence (AI) and machine learning;
- Last-mile delivery distribution facility automated storage and retrieval systems (ASRS);
- Smart wearables, and;
- Last-mile delivery distribution facility-related autonomous vehicles, robots and drones.



The Internet of Things (IoT)

The Internet of Things (IoT), or in this case the Industrial Internet of Things (IIoT), is a key component of Industry 4.0 (Figure 4).

Figure 4: The Industrial Internet of Things (IIoT)



Source: TIBCO, Cushman & Wakefield Research

IIoT combines the capability of connected sensors and devices, software, smart hardware, data, and real-time analysis to enable fast and accurate business decisions so as to optimise last-mile delivery distribution facility delivery process coordination, efficiency and productivity at any given time.

Last-mile delivery distribution facility management systems

A last-mile delivery distribution facility management system continuously monitors everything going on in the facility. Elements that are monitored include delivery inventory on-hand, incoming deliveries/outgoing deliveries, what last-mile delivery distribution facility machines are installed and working and what they are doing at any given time to ensure operations are run in the smoothest manner possible at any given time (Figure 5).

Figure 5: A typical last-mile delivery distribution facility management system



Source: Hopewell Logistics, Cushman & Wakefield Research



Warehouse management systems (WMS) can be integrated with order management systems (OMS) by linking up the sales platform system with the logistics end system. Once an order is generated, the OMS will immediately push the information to the WMS. From the retailer's point of view, they will also be able to monitor their inventory dynamics and goods delivery status through the system.

– A China logistics industry representative

Voice picking

Voice picking is a system that reads a delivery order when it comes in and directs the last-mile delivery distribution facility worker/ last-mile delivery courier in terms of what to do – thus cutting out the need to read papers and deal with physical items (Figure 6).



Figure 6: Selected advantages of voice picking



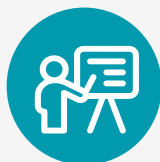
Increased accuracy

Voice picking eliminates the distractions created by hand-held scanners or lists, allowing the picker to dedicate their full focus to their current task. This greatly reduces errors, leading to up to 85% increase in accuracy.



Increased productivity

Voice directed work allows users to focus on the task they are performing, while keeping hands and eyes free. This reduces the steps required to complete a pick, improves safety and ergonomics.



User adoption and training

Voice-directed technology reduces training time by 67% on average. Workers can self-train using web-based tools. Companies using this technology experience significant reductions in the cost of new-hire training.



Increased safety

With voice, workers' eyes are up and looking ahead at their work and their surroundings. Their hands are not occupied holding clipboards or scan devices, freeing their eyes to focus on the task at hand. They are safer.

Source: WMS, Cushman & Wakefield Research

Artificial intelligence (AI) and machine learning

In last-mile delivery distribution facilities, artificial intelligence (AI)-related software makes use of historical data and modelling to foresee events and rationalise processes. For example, delivery demand surges or lows can be predicted. Delivery processing is then adjusted to meet demand levels at any given time. Another example where AI can be put to effective use in last-mile delivery distribution facilities is predictive maintenance, which both better prevents any downtime incurred if a piece of equipment or machine fails and makes last-mile delivery distribution facilities that much safer for the employees.

Additionally, when it comes to undertakings like sorting, packing, and picking, AI software utilises modelling to enhance work efficiency – without spoiling any package inventory (Figure 7).

Figure 7: Selected ways in which AI can enhance last-mile delivery distribution facility operations



Source: Cushman & Wakefield Research

Last-mile delivery distribution facility automated storage and retrieval systems (ASRS)

ASRS can include facility components like carousels and cranes. The ASRS system optimises space by providing an extra area for temporary storage when compared to more conventional last-mile delivery distribution facilities (Figure 8).

Figure 8: Selected last-mile delivery distribution facility ASRS objectives and advantages

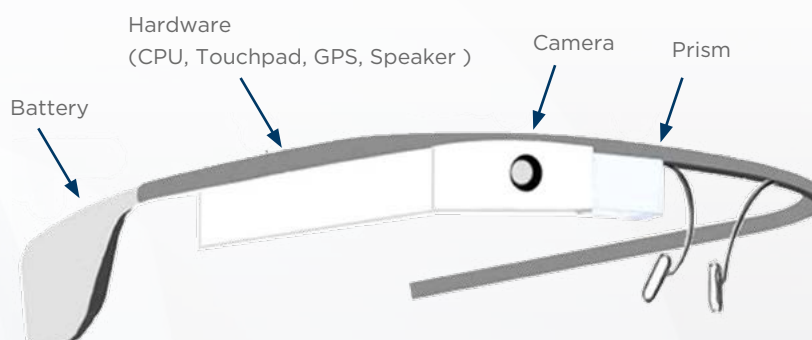


Source: Cushman & Wakefield Research

Smart wearables

From a smart bracelet to augmented reality glasses, these smart wearable items can provide key work-related information directly to the employee, thus permitting them to concentrate on the task at hand without the need to bring to a halt their work and check papers or cumbersome electronic devices (Figure 9).

Figure 9: Augmented reality glasses – Working components



Source: Varifocals, Cushman & Wakefield Research

Last-mile delivery distribution facility-related autonomous vehicles, robots and drones

When used in last-mile delivery distribution facilities, autonomous vehicles, robots and drones have the potential to reduce the amount of manual labour carried out by facility employees and any human-error mistakes incurred on any given working day related to package scanning, sorting, stacking, storing, picking, etc.

Additionally, by adopting and making use of last-mile delivery distribution facility-related autonomous vehicles, robots and drones, distribution facilities have the potential to be run that much more efficiently. At the same time, delivery times are likely to see a further reduction while facility space could be further optimised (Figure 10).

Figure 10: Advantages of using last-mile delivery distribution facility-related autonomous vehicles, robots and drones

Reduced labour	
Reduced human error	
Increased efficiency	
Delivery time reduction	
Space optimisation	

Source: Cushman & Wakefield Research

Tracking improvements

Package tracking in China is continuing to improve. For those delivery enterprises which are using the latest technology, a number of recognisable improvements have recently been made, including:

AI-based package tracking is ensuring on-time delivery execution

Information from previous delivery runs can be plugged in to better predict a package's actual delivery time.

Real-time visibility is the norm

Dispatchers, managers, retailers and customers can all now view the status of every package delivery as it happens, resulting in both an enhanced customer experience and better business management.



For some high-end products, such as some sports shoes, manufacturers have tried to use radio-frequency identification (RFID) chip technology. By using a RFID identification chip, manufacturers can not only carry out more refined product distribution management but can also better ensure that counterfeiting of the product is negated. However, due to the relatively high cost of this system, it can only be used for medium to high-end products.

- A China logistics industry representative



Delivery drivers are being empowered

Delivery drivers can now communicate instantaneously with dispatchers and make delivery amendments directly within the delivery app, such as the timing of the delivery, which can be viewed in real-time by the customer, which in turn keeps the customer more informed at any given time during the delivery process.

Customers are getting a better delivery experience

Not only is technology improving on-time delivery and enabling package tracking to be done in real-time, but it is also raising the end-to-end delivery experience for the customer by keeping them updated with progress via messaging and notifications throughout the entire process.



Delivery efficiently is being heightened and delivery costs are being reduced

Through greater efficiency, successful deliveries are often now being executed at little to no raised costs (Figure 11).

Figure 11: Package tracking improvements today

On-time delivery	
Real-time visibility	
Delivery drivers more empowered	
Better customer delivery experience	
Delivery efficiency enhanced	
Delivery costs reduced	

Source: Cushman & Wakefield Research

Ahead, package delivery in China will continue to evolve as even more updated and improved package tracking technology is adopted and used. By evolving and keeping up with the times, delivery enterprises in China can make sure that their future delivery operations are efficient, cost-effective, and designed to amplify customer satisfaction.

IoT plays a good bridge role in terms of efficiency enhancement, as it systematises all kinds of logistics information to help operators optimise the entire delivery route in advance. Through data analysis, operators can predict journey times and manpower costs, so as to rationally optimise the use of resources, which can enhance efficiency and reduce cost.

- A China logistics industry representative

Delivery improvements

Today, lorries, vans and scooters are mostly utilised for last-mile deliveries around the world, including in China. With the attention moving towards sustainability and utilisation of green transportation, but also an emphasis on cost and delivery speed and efficiency, the logistics industry around the world and in China is presently looking at various delivery mode options, including autonomous delivery vehicles, delivery robots, delivery drones and fixed-wing unmanned aerial vehicles (UAVs) that deliver packages and parcels.

Whether it is a drone or automatus vehicle, they all have space in the sector for market application. The size of this space will depend on the development speed of the related technology and the extent to which this technology is accepted, adopted, implemented and applied within the overall logistics industry.

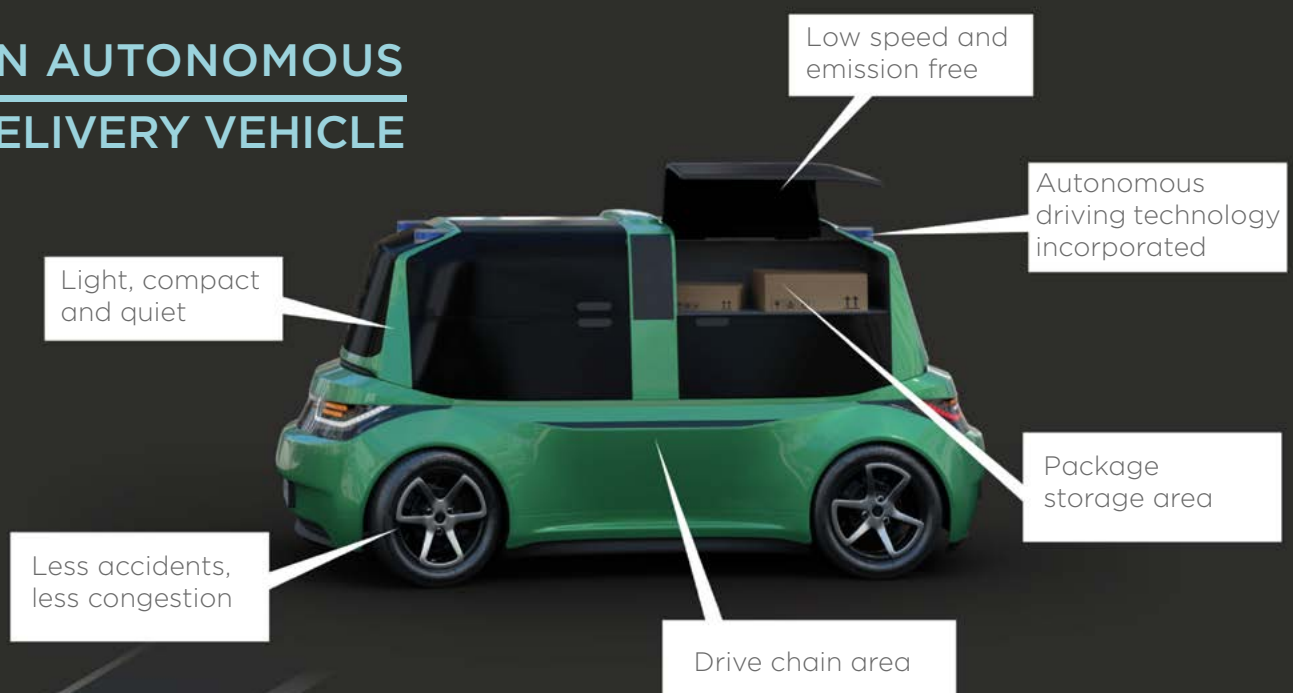
– A China logistics industry representative

Autonomous delivery vehicles

Autonomous delivery vehicles within the last-mile delivery industry are expected to see continued breakthrough development in China. The market is anticipated to see large growth numbers over the next five years to reach a volume of 60,000 driverless last-mile delivery vehicles by 2025, said a recently released annual report on the development of China's commercial vehicle industry (Figure 12).

Figure 12: A typical autonomous delivery vehicle

AN AUTONOMOUS DELIVERY VEHICLE



Source: Cushman & Wakefield Research



The COVID-19 pandemic was certainly a booster in terms of autonomous delivery vehicle development in China. At the time of the COVID-19 outbreak in Shanghai, JD, Meituan and Alibaba – three of China's biggest ecommerce enterprises – provided hundreds of driverless delivery vehicles to residential communities within the city in response to the much-needed contactless delivery and sanitisation issues of the time.

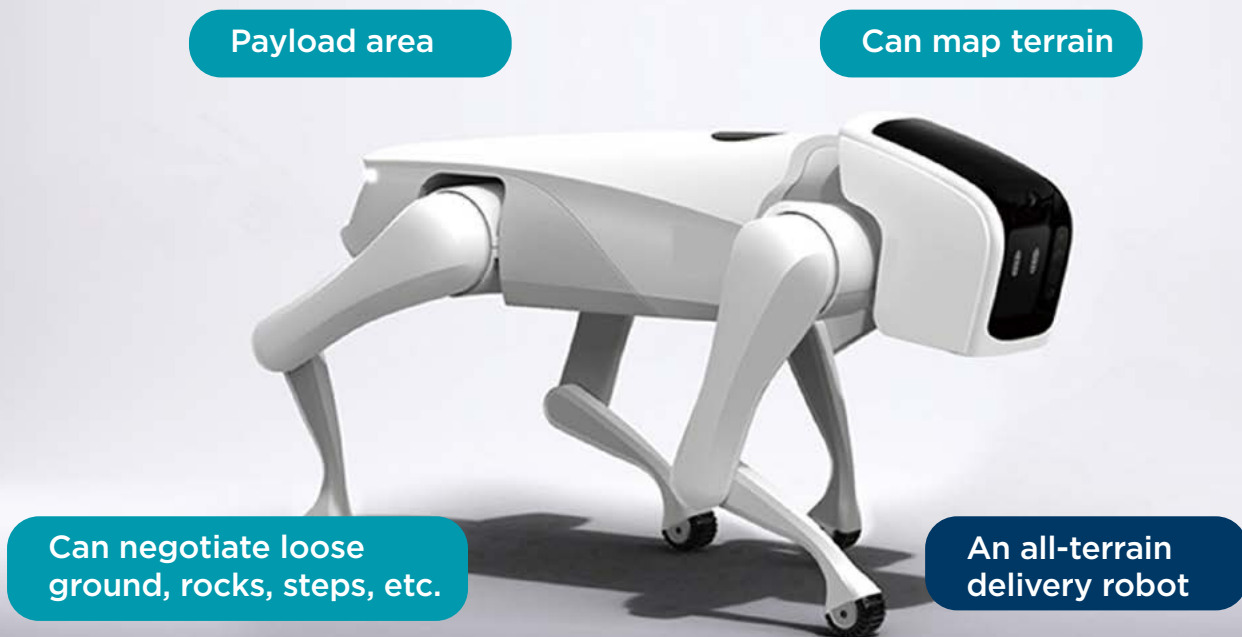
AUTONOMOUS

Ahead, as the market size for last-mile delivery grows, enterprises could alter their development emphasis to align with associated industries, such as the construction of intelligent roadside infrastructure that can network with self-driving vehicles. It is expected that the market size for such vehicles and associated infrastructure together could reach RMB 496 billion by 2030.

Delivery robots

Robots that could potentially be used for last-mile delivery are also being developed in China. These units generally move at around 5-15 km per hour and utilise AI to see and hear as they navigate their surrounding environment (Figure 13).

Figure 13: A four-legged all-terrain delivery robot



Source: Cushman & Wakefield Research

Using 5G tech and reinforcement learning, some all-terrain delivery robots can calculate the friction and height of the ground in order to adapt to the environment, which is ideal when negotiating terrain not fit for vehicles, such as some outlying rural areas.

As China has made big investments in robotics and AI over the years, a sizeable number of general robots are already used to deliver parcels, serve in restaurants, and offer information at shopping centres, stations, airports and hotels.



Delivery drones

Another innovation that is expected to take last-mile logistics in China to the next level of growth is the utilisation of autonomous unmanned aerial vehicles or drones (Figure 14).

Figure 14: A typical delivery drone



Source: Cushman & Wakefield Research

To date, companies like Meituan and JD.com have already made some deliveries to customers in order to fill demand.

Drones can solve key supply chain challenges, especially issues related to last-mile delivery and transportation-related holdups. Last-mile delivery is often the most expensive part of the overall delivery and may make up over half of the delivery transportation costs given the multiple stops often incurred.

Last-mile delivery can often be costly in China's rural areas, where delivery termini are far and the ground can be tough to cross, with mountains and other landforms acting as obstacles to order fulfilment. With a burgeoning ecommerce market in China's countryside, drones are able to traverse remote areas and rise above any lack in traditional logistics transportation infrastructure.

In China's urban areas, the use of drones requires special permission. Having said this, traffic jams from time to time can make potential drone deliveries more expedient than human deliveries.

In terms of company drone development in China, JD commenced drone delivery in 2015, and has since established a three-level UAV logistics distribution and navigable logistics system for trunk lines, branch lines, and terminals. Trunk line drones can cover a distance of 300 km and transport products from warehouse to warehouse by means of large ton-class drones. Branch line drones can deliver smaller batches rapidly between logistics sub-centres, and terminal drones fly to isolated areas to solve any last-mile delivery issues. Meanwhile Meituan completed its first delivery order in January 2021 and has now reached 8,000 customers in Shenzhen under a pilot programme. To surmount delivery obstacles and issues, Meituan utilises a reliable navigation system and equips its drones with spare powertrain capacity.

Policy is important for the future of last-mile delivery drones and China's guidelines are responsive and amenable to drone operation. The first national standard for express drone delivery service was enacted in January 2021. This rule spells out the requirements for conditions, procedures, and safety related to express drone delivery. Moreover, drones that are used for commercial purposes, including last-mile delivery, must be approved by and registered with the Civil Aviation Administration of China.

Fixed wing delivery UAVs

Fixed-wing delivery UAVs as part of a last-mile delivery solution have also been developed in China (Figure 15).

Figure 15: A typical fixed-wing delivery UAV

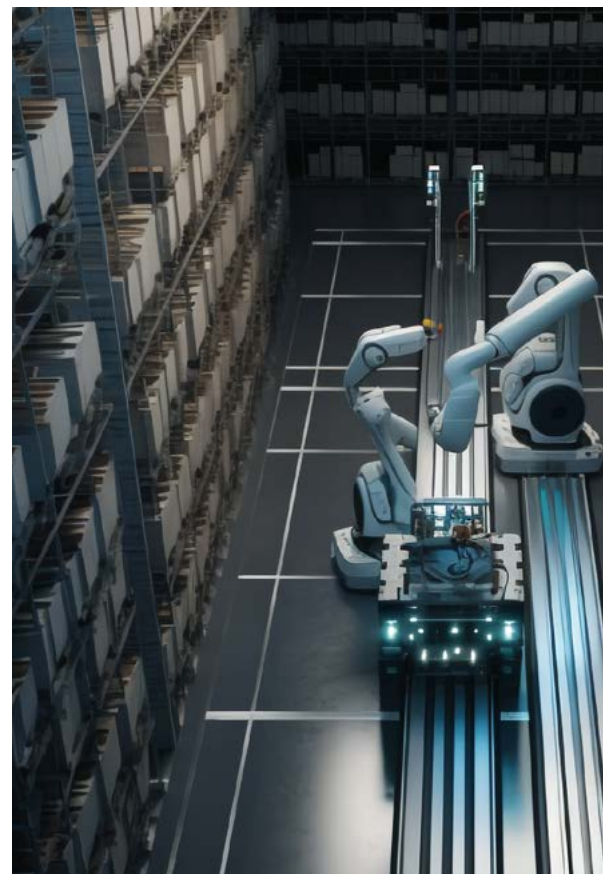


Source: Cushman & Wakefield Research

For example, SF Express has brought into service a new plane-sized UAV which can transport cargo up to 1.5 metric tons. SF Express's FH-98 UAV also has cargo volume capacity of 15 cubic metres, one of the largest for a UAV in China.

The FH-98 UAV has a maximum range of 1,200 km, a cruising speed of 180 km per hour and will be part of a wider delivery network SF Express is creating. This network will encapsulate a three-part air transport network, which will include “piloted planes for mainlines, sizable crewless aircraft for support routes and small drones for short-distance deliveries to individual recipients.”

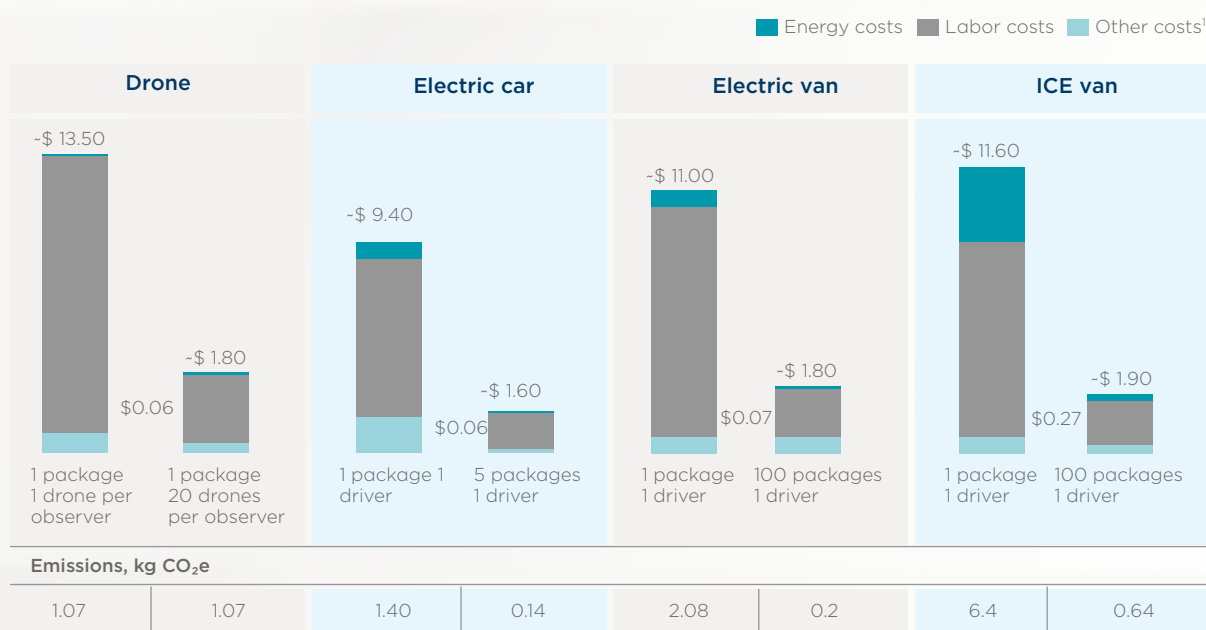
Meanwhile, as the need for UAVs grows, other enterprises have also entered the fixed-wing delivery UAV space in China. Autoflight Aviation Technology is one and it is developing its V400 Albatross UAV. This UAV is expected to have a payload capacity of 100 kg and a flight range of between 300 km and 1,000 km. Another enterprise is Beihang Unmanned Aircraft System Technology which is developing a 3.6-ton super UAV. This UAV is expected to fly autonomously for 932 miles, with a payload of 1 ton. Beihang is looking to commence deployment in 2025.



Developing a last-mile autonomous delivery strategy

When considering such issues as cost, technology, level of local transportation infrastructure development and sustainability, third-party logistics providers, ecommerce enterprises, retail chains, restaurant groups, and supermarket conglomerates in China would do well to soon establish a well-defined last-mile delivery strategy, whether it is to deliver goods and products to their customers by traditional ways or by new ways aided by technology. In the decision-making process, both the pros and cons will have to be weighed up and questions asked (Figure 16).

Figure 16: Unit delivery costs and emissions for a five-mile delivery of a 216-cubic inch package



Source: McKinsey & Company, Cushman & Wakefield Research

Some of the leading questions which could be asked include:

- What goods and products can practicably be transported in China using the latest last-mile delivery technology and how amenable will customers be to these alternatives?
- What regions in the country will have the highest need for last-mile delivery using the latest technology?
- Can the current stock of stores and warehouses in China be altered and adapted to incorporate the latest last-mile delivery technology, and will supplementary infrastructure or facilities be needed?
- How well can last-mile delivery autonomous vehicles, robots, drones and/or UAVs be amalgamated into wider delivery operation systems in China?
- How can the utilisation of the latest last-mile delivery technology help contribute to the company's sustainability goals?

As companies ponder these questions, it is important to acknowledge that establishing last-mile delivery systems that use the latest technology will not be easy. Having said this, there are a number of emerging examples in China where last-mile delivery using the latest technology can bring value for companies. And as companies reach full last-mile delivery capabilities using the latest technology, they will start to realise the growing advantages that their new delivery strategies bring.

Collection point improvements

Last-mile delivery can be very taxing for enterprises delivering to customers at a designated home or business address when the receiving customer is not present to receive the package at the collection point. This can result in multiple attempts to deliver by the delivery enterprise before a successful delivery is executed, which usually results in an unexpected increase fuel and labour costs incurred by the delivering enterprise.

Two ways to ensure delivery is executed each and every time is to incorporate a smart pick up and drop off (PUDO) system and/or a smart self-service delivery locker bank system:

A smart PUDO system

A smart PUDO system incorporates a selected location for consumers to receive and leave packages. Generally, smart PUDO sites in China are either staffed counters in existing businesses such as convenience stores, or unstaffed lockers in existing businesses (Figure 17).

Figure 17: How a PUDO delivery system works



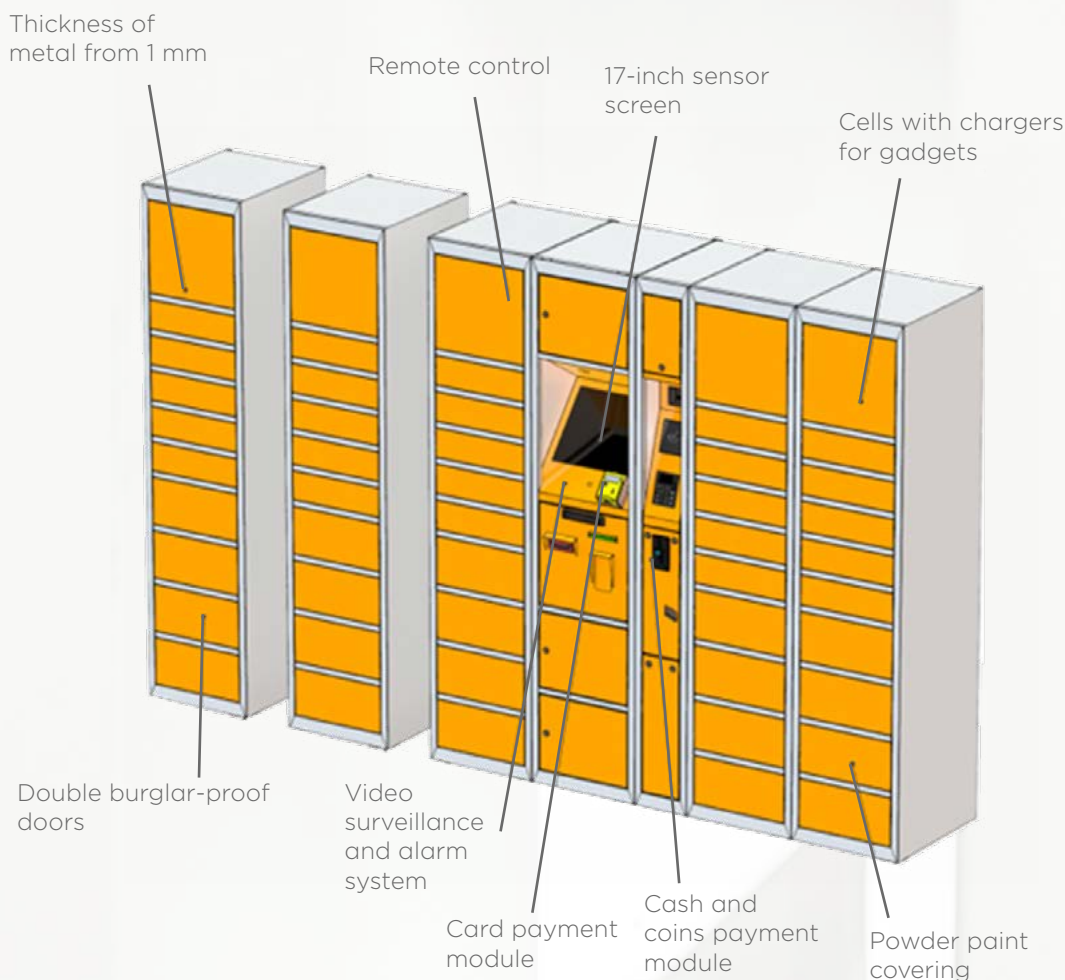
Source: Cushman & Wakefield Research

On the whole, logistics enterprises deliver packages to a smart PUDO location and at the location, the package is stored, and the customer notified of the delivery. When the consumer arrives at the smart PUDO location to collect the package, he or she uses a QR code to get his or her package from the smart PUDO location employee or to open the unmanned locker. If a customer needs to return a package, he or she can either book the return using the carrier's digital interface or get the store employee at the smart PUDO counter to scan the package label, depending on whether the smart PUDO location is manned or unmanned.

A smart self-service delivery locker bank system

Smart self-service delivery locker bank systems can be located anywhere, but many are located in residential communities in China (Figure 18).

Figure 18: the design, components and working parts of a typical smart self-service delivery locker bank



Source: MVK Mash Smart Lockers, Cushman & Wakefield Research

Like the smart PUDO system in many cases, these smart lockers have also proven to be popular given the general convenience, the ease of accessibility by both the delivering enterprise and the customer, the delivery efficiency, the 24/7 availability, the increased package security, and the fact that 65% of people in China now live in the country's urban areas. These smart lockers are also operated using a QR code access system.

Usually one community in an urban area needs around two couriers to cover the package distribution work. By using smart lockers, one courier can be responsible for the delivery of packages in three to four districts.”

– A China logistics industry representative

Key Takeaways

Overall, smart last-mile logistics in the Chinese market has led to an improvement in the efficiency and execution of last-mile delivery in the country. In fact, the general strength, the overall development level and, in particular, the application of digital technology in China has also led to a benchmarking effect on a global scale.

However, with further advancement in technology, further improvements can be made at many stages within the last-mile delivery process in China, including:

- The distribution facility stage;
- The tracking stage;
- The delivery stage, and;
- The collection point stage.

Finally, the last-mile delivery logistics market in China needs to continue to consider its market characteristics, the local consumer mindset and other factors to continue to effectively apply technology to business scenarios to keep costs down while at the same time helping local markets provide the best last-mile logistics and delivery solutions to the customer.

BUSINESS CONTACTS



Tony Su

Head of Industrial & Logistics
Property Services, China
tony.zy.su@cushwake.com



Vincent Huang

Associate Director
Industrial & Logistics Property
Services, China
vincent.huang@cushwake.com



RESEARCH TEAM



Sabrina Wei

Head of Research
North China
sabrina.d.wei@cushwake.com



Xiaoduan Zhang

Head of Research
South & Central China
xiaoduan.zhang@cushwake.com



Ivy Jia

Head of Research
West China
ivy.jia@cushwake.com



Rosanna Tang

Head of Research
Hong Kong
rosanna.tang@cushwake.com



Eason Lee

Associate Director of Research
Taiwan
eason.i.h.lee@cushwake.com

This report was authored by Shaun Brodie, Head of Research Content, Greater China, and Head of Research, East China and designed by Tenny Shen. Analysis support was provided by Chao Guan. Proofreading services were provided by Simon Graham.

To better serve our clients our China Research Team has established Centres of Excellence in various focus areas, such as Capital Markets, Occupier Markets, Office, Industrial and Retail. Shaun leads the Research Centre of Excellence for Greater China Occupier Research. If you have any queries related to Occupier Research in Greater China, please contact:



Shaun Brodie

Head of Research Content,
Greater China
Head of Research, East China
shaun.fv.brodie@cushwake.com

About Cushman & Wakefield

Cushman & Wakefield (NYSE: CWK) is a leading global commercial real estate services firm for property owners and occupiers with approximately 52,000 employees in approximately 400 offices and 60 countries. In Greater China, a network of 23 offices serves local markets across the region. In 2022, the firm reported global revenue of US\$10.1 billion across its core services of valuation, consulting, project & development services, capital markets, project & occupier services, industrial & logistics, retail and others. It also receives numerous industry and business accolades for its award-winning culture and commitment to Diversity, Equity and Inclusion (DEI), Environmental, Social and Governance (ESG) and more. For additional information, visit www.cushmanwakefield.com.

Disclaimer

This report has been produced by Cushman & Wakefield for use by those with an interest in commercial property solely for information purposes. It is not intended to be a complete description of the markets or developments to which it refers. The report uses information obtained from public sources which Cushman & Wakefield believe to be reliable, but we have not verified such information and cannot guarantee that it is accurate and complete. No warranty or representation, express or implied, is made as to the accuracy or completeness of any of the information contained herein and Cushman & Wakefield shall not be liable to any reader of this report or any third party in any way whatsoever. Cushman & Wakefield shall not be held responsible for and shall be released and held harmless from any decision made together with any risks associated with such decision in reliance upon any expression of opinion in the report. Our prior written consent is required before this report can be reproduced in whole or in part.