



Spotlight on China Retail – Issue 9

# Retail and E-commerce Logistics

Asia Distribution and Retail

 FUNG BUSINESS INTELLIGENCE

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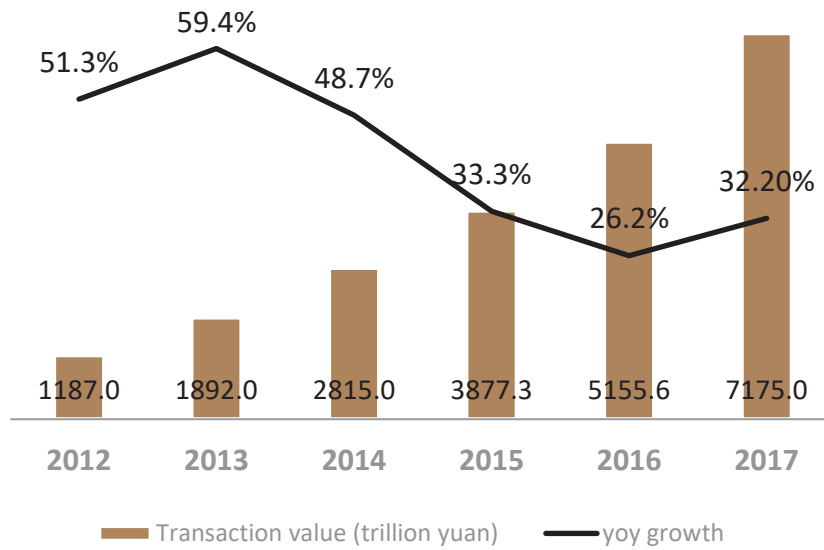
Technological advancement and the explosive growth of e-commerce in the country have rendered the retail and e-commerce logistics industry a fertile ground for development and growth. With half of the world's parcels now being delivered in China, logistics providers and e-commerce players alike are exploring new ways to better serve the customers and further expand their business, and making huge investments in logistics infrastructure home and abroad, with a hope to gain a larger pie of the fast-growing market. Many have come up with innovative ways to improve logistics services and provide quicker delivery for customers. Meanwhile, technologies have empowered logistics transformation; companies are becoming more digital, automatic and smart. “Smart logistics” is now dominating the retail and e-commerce logistics sector.

## I. Market overview

### 1. Strong growth of online retail sales fuels demand for logistics services; total logistics value increases steadily

China's online retail market, which is now the world's largest, has experienced rapid growth over recent years. Total online retail sales increased by 32.2% year-on-year (yoy) to reach 7.18 trillion yuan in 2017 (Exhibit 1), while online sales of physical goods amounted to 5.48 trillion yuan, up by 28.0% yoy and accounted for 15.0% of total retail sales.

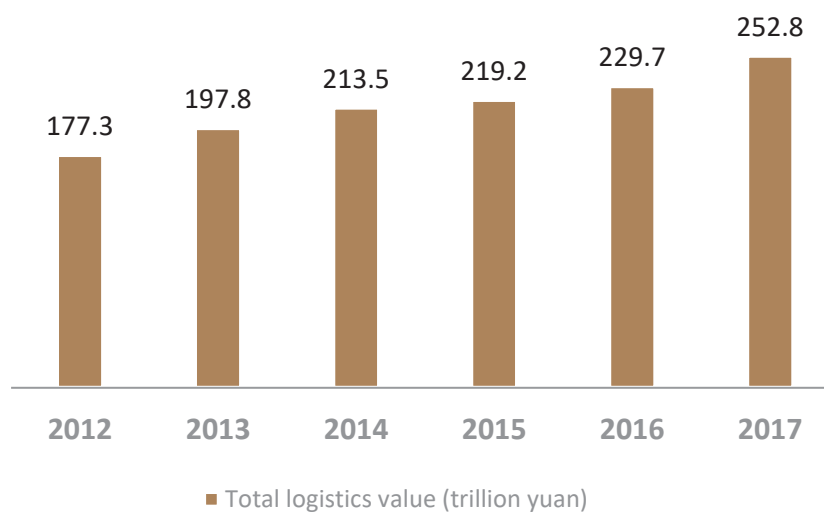
**Exhibit 1: Total online retail sales of goods and services, 2012 – 2017**



**Source:** China Federation of Logistics and Purchasing; compiled by Fung Business Intelligence

The fast growth of online retailing in China has given the logistics industry a boost in line with soaring demand for transport and delivery services. Total logistics value reached a record 252.8 trillion yuan in 2017 (Exhibit 2), up by 0.6% yoy in real terms.

**Exhibit 2: China’s total logistics value, 2012 – 2017**

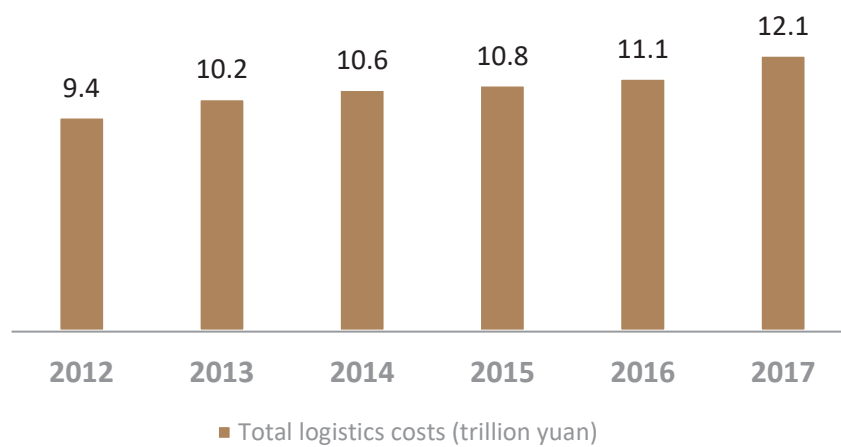


**Source:** China Federation of Logistics and Purchasing; compiled by Fung Business Intelligence

## 2. Logistics costs remain high; transportation costs account for the lion's share of total costs

Total logistics costs remain high in China. According to the China Federation of Logistics and Purchasing, China's total logistics costs amounted to 12.1 trillion yuan in 2017 (Exhibit 3), up by 9.2% yoy. The ratio of total logistics costs to GDP was 14.6% in 2017, down from 14.9% in 2016 and 16.0% in 2015.

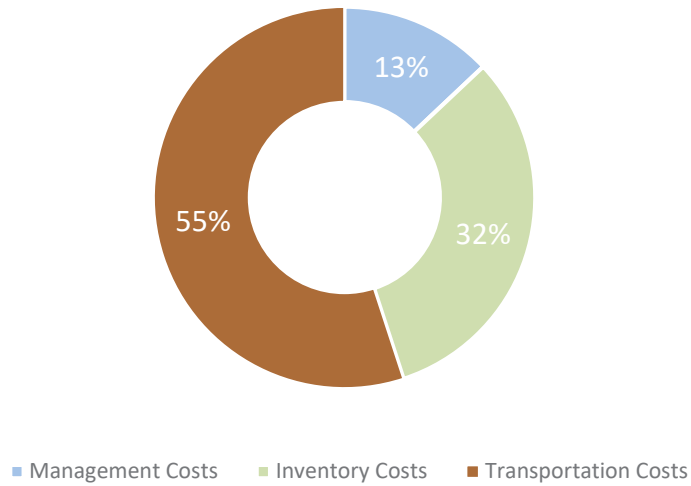
Exhibit 3: China's total logistics costs, 2012 – 2017



**Source:** China Federation of Logistics and Purchasing; compiled by Fung Business Intelligence

As shown in Exhibit 4, transportation costs accounted for the largest share of total logistics costs and comprised almost 55% of the total costs in 2017, while inventory and management costs accounted for 32% and 13% of the total logistics costs respectively.

**Exhibit 4: Cost structure of logistics industry in China, 2017**

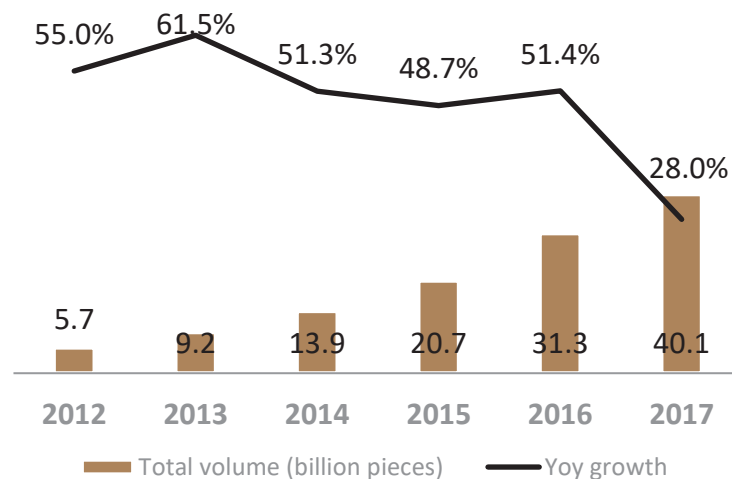


**Source:** *China Federation of Logistics and Purchasing; compiled by Fung Business Intelligence*

### 3. Express delivery market scales up; growing demand for intra-city courier services (same-city delivery)

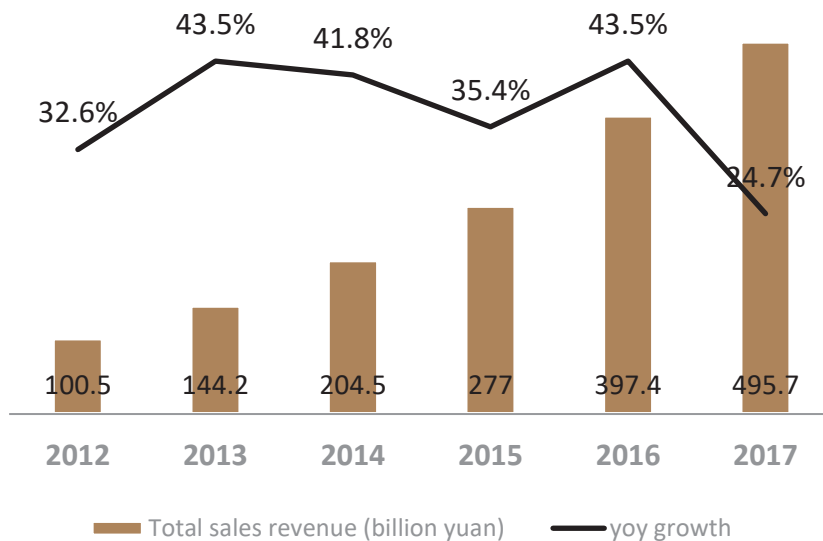
As a critical part of e-commerce logistics, the express delivery sector has grown rapidly. As shown in Exhibit 5, the total volume of completed deliveries amounted to 40.1 billion pieces in 2017, up 28.0% yoy, making China's express delivery market the largest in the world in terms of delivery volume. Total sales revenue for the sector amounted to 495.7 billion yuan, up 24.7% yoy (Exhibit 6).

**Exhibit 5: Total volume of China's express delivery sector, 2012 – 2017**



Source: State Post Bureau; compiled by Fung Business Intelligence

**Exhibit 6: Total sales revenue of China's express delivery sector, 2012 – 2017**



Source: State Post Bureau; compiled by Fung Business Intelligence

China’s express delivery sector has three major market segments, namely, intra-city courier, inter-city courier, and cross-border delivery. As shown in Exhibit 7, inter-city courier accounted for the largest share of the sector, contributing 74.8% of the total market volume and over 50% of the total revenue. Intra-city business accounted for only 23.1% and 14.8% of the total market volume and total revenue in 2017 respectively. That said, the intra-city business has been the fastest growing segment in recent years. In 2017, sales revenue of intra-city courier increased by 30.0% yoy to 73.23 billion yuan; by contrast, sales revenue of inter-city courier rose by 19.7% to 251.28 billion yuan and sales revenue of international courier increased by 23.3% yoy to 52.89 billion yuan.

The surge in demand for intra-city courier is due in part to the emergence of new retail practices such as online-to-offline (O2O) e-commerce and an increasingly large number of online channels selling fresh produce.

**Exhibit 7: Market share of the three segments of the express delivery sector, 2013 – 2017**

	Intra-city courier		Inter-city courier		International courier	
	% of Volume	% of Sales Revenue	% of Volume	% of Sales Revenue	% of Volume	% of Sales Revenue
<b>2013</b>	24.9	11.5	72.2	57.5	2.9	18.8
<b>2014</b>	25.4	13.0	72.3	55.3	2.3	15.4
<b>2015</b>	26.1	14.5	71.8	54.6	2.1	13.3
<b>2016</b>	23.7	14.2	74.3	52.8	2.0	10.8
<b>2017</b>	23.1	14.8	74.8	50.7	2.1	10.7

*Source: State Post Bureau; compiled by Fung Business Intelligence*

## II. Key trends and developments

### 1. “Smart logistics” dominates the agenda

In today’s high competitive and rapidly evolving era, developing smart logistics has become one of the most important strategies for business to outperform competitors. The adoption of advanced technologies such as Radio Frequency Identification (RFID), Global Positioning System (GPS), the Internet of Things (IoT), cloud computing, drones, and robotics, in addition to automation of logistics processes to improve efficiency, has become imperative for the retail and e-commerce logistics sector.

Recently, logistics and e-commerce operators have invested heavily in smart logistics, hoping to enhance fulfilment capability and efficiency, to streamline operations and reduce logistics costs. JD.com is a case in point. Over the past few years, the company has made substantial investments in smart warehouses and new delivery methods with an aim to improving fulfilment efficiency and increasing storage capacity. In June 2014, JD.com launched its first "Asia No.1" warehouse in Shanghai. The warehouse incorporates a high degree of automation; all operations in the warehouse are fully automatic, including receiving goods, storage, packaging and sorting. As of 2017, JD.com operated 14 "Asia No. 1" warehouses across the country.

JD.com's rival Cainiao is also continuing to invest in smart logistics. In April 2018, Cainiao announced to launch its first smart delivery system globally in a community in Yuhang District in Hangzhou. The smart delivery system features four major elements – facial recognition system, "smart pipes", smart lockers, and an app to control the locker. Authorized courier staff can scan their face to verify their identity and deliver parcels to the smart delivery system. After passing through the Cainiao Security System, parcels will be distributed to respective smart lockers inside each apartment. The smart delivery system also supports reverse logistics. Users can also adjust the temperature inside the smart locker for the storage of fresh food.

## **2. Innovations to strengthen last-mile delivery**

To cater to consumers' heightened expectation for fast delivery, both retailers and logistics players have launched and tested various types of fulfilment models. Retailers such as Uniqlo, Walmart (China), Yonghui Superstores, YH Super Species and Watsons have introduced "click & collect" services. Many retailers have partnered with O2O platforms or logistics companies to roll out such services. For example, on-demand logistics and omnichannel e-commerce platform Dada-JD Daojia (a JD.com joint venture) has partnered with over 200 Walmart stores and 500 Yonghui stores, among numerous other supermarkets and grocery stores, to provide premium online fresh grocery shopping experience with 1-hour home delivery service. Watsons, on the other hand, has leveraged Cainiao's "ship-from-store" service to fulfil online orders and deliver goods as fast as two hours.

Meanwhile, some retailers and logistics operators have introduced innovative ways to speed up delivery and enhance consumer convenience. One such example is drone delivery; it has been increasingly adopted by companies. In May 2018, YH Super Species trialled drone delivery for physical products between YH Super Species store in Guangzhou M+Park and a

designated pick-up area in a residential community nearby. YH Super Species has employed some couriers in the residential buildings to collect delivery orders from drones and complete the last mile delivery to consumer's designated address. It is reported that orders can be delivered in 15-20 minutes within a 3-km distance from the store. JD.com has also ramped up its efforts in drone delivery. The company has started tested drone delivery since March 2017. It gained the formal approval from the Civil Aviation Administration of China (CAAC) in February 2017 to start sending packages by drone in certain rural areas.

Besides drone delivery, some companies have trialled autonomous vehicle to handle last-mile delivery. An example is Suning. In July 2018, Suning's logistics arm Suning Logistics signed a strategic partnership with Baidu Apollo to develop smart logistics. The two companies jointly unveiled a driverless delivery vehicle called the "MicroCar" which is equipped with Baidu's L4-class intelligence system. According to Suning, the vehicle is designed to solve the last 5-km delivery problems. The autonomous vehicle will first be used in Suning Xiaodian (Suning's convenience stores) to provide delivery services for online orders that are made within a 3-km distance of Suning Xiaodian's surrounding communities.

Other innovations that facilitate last-mile delivery include smart pick-up tower in key locations. Prior to this year's 6.18 shopping festival, Cainiao trialled and launched a number of smart pick-up towers in various communities and industrial parks in Hangzhou. With a height of more than 5 meters and in an octahedron shape, the smart tower connects with drones and unmanned vehicles and provides pick-up services 24/7 all around the year. It can store approximately 600 – 800 parcels, and customers can pick up their parcels by facial scanning.



*Cainiao's smart pick-up tower (Photo source: iwangshang)*



### 3. E-commerce and logistics players put more emphasis on global logistics network expansion

Considering the rapid development of cross-border e-commerce (CBEC) in recent years, companies engaged in e-commerce and logistics have stepped up global expansion of their logistics network to better facilitate cross-border delivery between China and overseas countries. Cainiao is a case in point. In May 2018, Cainiao unveiled its plans to build world-class logistics hubs in several locations around the world – including Hangzhou, Kuala Lumpur, Dubai, Moscow and Liege – as part of its global hub expansion plan. Cainiao hopes to create more efficient logistics operations and offer single-day delivery in China and 72-hour delivery across the globe for countries and regions involved in the Belt and Road Initiative.

JD.com's logistics arm JD Logistics has upgraded its overseas warehousing services to cater the increasing demand for cross-border logistics services just before the 6.18 shopping festival. This has reportedly enabled the company to provide quick delivery for CBEC – an average of 3.9 days for products delivered via the “direct mail” model; customers living in major cities can even enjoy next-day delivery after placing their order. JD.com has over 110 overseas warehouses in five continents as of June 2018.

On the other hand, some local courier companies such as SF Holding Co, the parent company of delivery service provider SF Express have also speeded up global expansion in recent years. In May 2017, the company announced its plan to set up a joint venture with UPS Parcel Delivery Service Ltd. to collaborate on development and provision of international delivery services from, initially, China to the U.S. and, in the future, to other countries. The joint venture combines SF Holding Co's 13,000 service points in 331 cities in China with UPS' global network spanning 220 countries, allowing the two companies to leverage their complementary networks, service portfolios, technologies and logistics expertise to accelerate B2B and B2C cross-border trade. In the same month, Alibaba-backed YTO Express announced to purchase of 61.87% stake in Hong Kong-based On Time Logistics as part of its international expansion initiative. On Time Logistics is principally engaged in the air freight forwarding business and has established an extensive network overseas including Asia, Europe and North America; the acquisition will allow YTO to develop overseas business and further broaden its income stream.

#### **4. Rural logistics is the next growth engine**

China's rural e-commerce has continued its robust growth momentum over recent years. According to the Ministry of Agriculture and Rural Affairs of the PRC, online retail sales in rural areas reached 1.25 trillion yuan in 2017, accounting for 17.35% of the country's total online retail sales of goods and services, up from 6.45% in 2014.

The promising outlook for rural e-commerce has prompted many leading e-commerce and Internet companies to push ahead with "going rural" initiatives. For instance, in April 2018, Alibaba invested 4.5 billion yuan in Huitongda Network Co, a Chinese rural online services platform and a subsidiary of Jiangsu Five Star Appliances Co as part of its continued push to expand business in the country's rural areas. The two companies will work together on supply chain logistics, warehousing and technology to improve e-commerce infrastructure in rural areas. Indeed, Alibaba first launched its Rural Taobao initiative in late 2014, providing an e-commerce platform and logistics infrastructure for rural residents to buy and sell items online via Taobao. Since then, it has set up thousands of service centers in the countryside to provide e-commerce delivery in rural areas. In 2016, Alibaba followed up with a three-year plan to invest 10 billion yuan in rural e-commerce, with a continued focus on boosting infrastructure and building more service centers.

Another example is JD.com. In January 2018, JD.com said it planned to assign drones to China's northeastern "rust belt" region, comprising provinces such as Heilongjiang, Jilin and Liaoning, to help improve efficiency in farming and logistics. It also stated that it will invest more than 20 billion yuan in the three provinces over the next three years to help the region "upgrade its industries, create jobs, inject innovation and upgrade retail services".

Earlier in October 2017, Suning Logistics announced that it will connect the towns and villages in Jiangsu and Zhejiang province by opening up a number of aviation routes for drones. Suning also revealed that it plans to build a smart logistics hub with 5,000 delivery drones, covering the country's unmanned aviation, research and development, production and after-sales ground service network.

#### **5. Growing demand for cold chain logistics**

Chinese consumers are more quality-driven and health-conscious nowadays, leading to an increasing demand for fresh produce. Temperature control is necessary in the handling of fresh products to retain their efficacy. This offers great development prospects for cold chain logistics. According to the China Federation of Logistics and Purchasing, the market size of the cold chain logistics industry in China is estimated to grow at a CAGR of 20% to reach 470

billion yuan by 2020, up from 250 billion yuan in 2017.

To tap this fast-growing market, some large-scale logistics companies have scaled up investments in cold chain logistics. In August 2018, SF Holding Co joined force with U.S. supply chain system provider HAVI Group LP to establish a cold-chain joint venture New HAVI in Shenzhen; the new company aims to provide customers throughout the cold chain market with comprehensive end-to-end solutions and services, while promoting the growth and development of the sector. Others express delivery companies such as STO Express and YTO Express also regard cold-chain business as a key business focus, and are setting up subsidiaries, new warehouses, etc. to facilitate the provision of cold chain logistics services.

Some e-commerce platforms have also put more emphasis on the cold-chain market. In July 2017, JD.com teamed up with Japanese logistics giant Yamato Transport Co Ltd. to strengthen its fresh produce cold-chain and cross-border logistics services, and jointly engage in logistics technology R&D development. Suning, on the other hand, has been expanding the scale of its cold chain warehouses. As of end-July, 2018, Suning Logistics operated 17 cold-chain warehouses across China.

## 6. Logistics players to go “green”

Nowadays, green logistics is at the heart of many logistics players. To attain sustainable development, they are exploring more environmentally sustainable ways to pack, transport, store, and distribute products. With the increase in the number of e-commerce parcels, particularly during the online shopping festivals, many logistics players have launched green initiatives to promote the use of sustainable, green packaging materials throughout the supply chain. For example, during the 11.11 Global Shopping Festival last year, Cainiao put in place a smart-packaging system in its warehouses to assess the category, volume, weight and delivered area of its orders, and match the goods to the most space-efficient form of packaging to reduce waste. The company has also set up 20 green warehouses across China where all parcels are packaged with renewable materials before shipping. In September 2018, Cainiao further announced that it has started to use recycling boxes for picking, loading and packing goods in some of its green warehouses.

Similarly, JD Logistics has also stepped up its green efforts with the establishment of “JD Logistics Green Fund” in December 2017. The fund is intended to be used for the transformation of green supply chain, R&D and innovations of green supply chain, and promotion of green consumption. Meanwhile, JD Logistics has also increased investments in new energy vehicles. It has launched over thousands of new energy vehicles across the

country to replace the traditional petroleum-based trucks.

In April 2018, Suning Logistics announced the setup of a green packaging laboratory to explore different forms of environmental friendly packaging products, develop new plans for packaging management in the industry and create a green packaging sharing platform.

Recognizing the importance of achieving sustainable logistics while enhancing efficiency, Alibaba’s new retail divisions including Tmall, Taobao, Xianyu, Ist.1688.com, Hema Xiansheng and ele.me jointly announced the commencement of its “Green Logistics Plan 2020” in May 2018. Major initiatives set forth in the plan include upgrading the delivery bags to eco-friendly bags, encouraging merchants to use fewer delivery boxes, reducing plastic wastage during takeaway delivering and opening up its carton screening technology.



*Parcel packaged with renewable materials (Photo source: Alizila)*

## **7. Government commits support to retail logistics development**

The government has been very supportive towards the development of the logistics industry. In particular, a number of specific policies and regulations have been promulgated to promote retail and e-commerce logistics development over the past few years.

In March 2018, the State Council executive meeting passed the *Interim Regulations on Express Delivery*, the first regulations governing and facilitating the development of the express delivery sector in the country. According to the regulations, after filing with administrative authorities, courier firms and their branches can set up terminal service outlets without applying for a business license. Delivery companies are also encouraged to operate cross-border shipping businesses and to build sorting centers for international

shipments at key ports and service and processing facilities in foreign countries. The regulations also laid out personal information protection requirements targeting illegal sales, leakage or provision of user information generated in shipping activities. The regulations became effective from 1 May, 2018.

In January 2018, the General Office of the State Council promulgated the *Opinions on Promoting the Synergistic Development of E-commerce and Express Delivery Services*. To accelerate the development of e-commerce and express delivery services, the Opinions set out policy guidelines in six areas including optimizing policies and regulations to accelerate the development of e-commerce and express delivery services; accelerating the development of logistics infrastructure for e-commerce; strengthening regulations and facilitating the management of delivery trucks for e-commerce orders; encouraging innovations in express delivery services; encouraging enterprises to go smart and improve operation efficiency; and encouraging the development of green ecosystem. Noticeably, this is the first time the government proposed the idea of green e-commerce and green express delivery. The government encouraged e-commerce players and express delivery operators to jointly promote green e-commerce and delivery by launching green packaging and green process reengineering in the supply chain, promoting green consumption, and exploring the establishment of a complete package recycling system.

Earlier in March 2016, six ministries including the Ministry of Commerce, the National Development and Reform Commission, the Ministry of Transport, the General Administration of Customs, the State Post Bureau, and the Standardization Administration jointly issued the *Special National Plan for the Development of E-commerce Logistics (2016–20)*. The plan laid out important development tasks that will support the development of e-commerce logistics.

These government policies are set to provide a more regulated and transparent environment for the development of retail logistics.

### **III. Concluding remarks**

The rapidly evolving retail and e-commerce market as well as the changing needs of consumers, particularly the requirement for immediacy and fast service, have continued to create huge development opportunities for the logistics sector. Given the rapid development of technology, new forms of technology-enabled logistics services models will appear to provide fast delivery and personalized pick-up options for customers. We also expect to see more strategic partnerships in the sector, especially in the express delivery segment as more express delivery companies strive to upgrade and expand their businesses and invest in innovation.

The retail and e-commerce logistics sector is set to be more competitive in the coming years. To succeed in the increasingly sophisticated and competitive environment, players need to be innovative and constantly come up with new services, while enhancing their logistics capabilities and expanding their logistics infrastructure and facilities. They should continue to go “smart” and adopt advanced technologies in the entire logistics process such as speeding up the construction of automated warehousing and logistics facilities and accelerating the logistics informatization process.

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