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JD: Envisioning the Future of Retail

After celebrating JD's 13th birthday on June 18, 2017, Richard Liu, the company's founder, chairman and CEO, observed the construction site outside his office window. JD was the second largest e-commerce company in China by gross merchandise volume (GMV). (See **Exhibit 1** on JD's growth over the years.) The new office building expanded JD's headquarters in Beijing, China, and symbolized the company's recent success. June 18 not only marked JD's founding, it also represented a shopping festival established by the company – and had quickly become one of China's largest online shopping festivals in addition to the massive Singles' Day sale on November 11, originally a festival for youths to celebrate their singlehood, as represented by the date's four single digits "11.11." From June 1-18, JD offered special promotions followed by other online retailers. In 2017, JD amassed a \$17.6 billion in total transaction volume during that period, an increase of over 50% compared to the same period in the previous year.¹

As JD challenged Alibaba more directly, Liu had to decide how to generate continued growth. To him, one important competitiveness of JD lay in the company's self-operated nationwide logistics network and developments in proprietary technologies.² With control over fulfillment and delivery, JD was able to offer same-or-next-day delivery as a standard service for Chinese consumers, a strategy that had won customers' hearts over the years.³ This fulfillment capability put JD in the leadership position, even when compared to its US counterparts such as Amazon.

Liu developed a sugarcane model to explain JD's value creation process over the years. The sugarcane model had 10 segments, and each segment represented a section on the retail value chain: brainstorm, design, research and development, manufacturing, pricing, marketing, sales, warehousing, distribution, and after-sales services. (See **Exhibit 2** on the sugarcane model.) JD had integrated more segments of the model into its business over the years. Liu explained, "JD is not only an e-commerce platform but has expanded into the segments of warehousing, distribution, after-sales services, and marketing, etc." He added, "The more segments a company controlled, the more value it captured. But the value you can capture from a sugarcane is capped. Having covered all segments of the sugarcane that JD could as an e-commerce retailer, we have reached our growth limits based on this sugarcane model and JD needs a new model to grow."

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Furthermore, growth in China's e-commerce market had declined in recent years. In China's Tier 1 and 2 cities,^a there was limited user growth potential because 89% of Internet users already shopped online.⁴ China's consumer demographics had also changed. Affluent youths from the post-1990s generation had become China's main consumer. "In China, luxury goods brands from around the world are turning their attention to the post-1990s generation," Liu observed. "Standards for quality have gone up, and the demand for personalization has also gone up. People are looking for customized goods, limited edition, and made-to-order kinds of things." This phenomenon of retailers catering to consumers' preferences was a key feature of the fourth retail revolution—a revolution marked by the digitization of the retail industry and availability of large quantities of consumer data. Liu believed that JD must adapt to this era of smart business. (See **Exhibit 3** on the four retail revolutions.)

As JD had grown and taken market share, competition between JD and Alibaba had become intense. Alibaba started to invest in logistics aggressively. To address slowing online growth, Alibaba also invested in offline stores, opening its own brick and mortar locations. Liu wondered, how would the future of retail landscape look like and what should be the right growth strategy for JD?

Chinese Retail Landscape

In 2016, China surpassed the United States as the world's largest retail market. Its total 2016 sales was \$4.886 trillion compared to \$4.823 trillion in the U.S. China also had the world's largest e-commerce market, with an estimated sales of \$899.09 billion in 2016, which made up 47% of e-commerce sales worldwide.⁵ A few key players dominated China's e-commerce: Alibaba's Tmall, JD, Vipshop, and Suning Tesco comprised nearly 90% of total market share. Alibaba's Tmall led the group with 59% of the market share, and JD followed with 26.9%.⁶ Yet despite China's globe-topping retail sales figures and a range of e-commerce platforms that catered to consumers' every need, annual growth rate of the Chinese e-commerce sector actually declined from 59% in 2013 to 20%, forecasted, in 2017 and was projected to drop to 16% in 2018.⁷ In addition to these challenges, the cost of acquiring new users online had increased. In 2017, the cost per new user was about RMB 80^b, while many products sold online were priced below this number.⁸

Offline retail stores, which made up approximately 85% of China's total retail market, also had their challenges. (See **Exhibit 4** on breakdown of online and offline market shares.) The 6 million mom-and-pop convenience stores, which made up 40% of offline retail sales, were outdated, inefficient, and often sold counterfeit goods.⁹ The storeowners usually managed everything by themselves—from running the cash register to ordering inventory to stocking the shelves. Since these convenience stores were often too small and local, they could not get large distributors to work with them directly. Instead, they had to work with multiple distributors. The long supply chain meant that the transport of goods was slow and expensive.¹⁰ Yet despite these shortcomings, these stores played an important role. Across both urban and rural settings, they served as local general stores that sold prepared meals and home staples. In cities, they offered quick lunches to college students and working professionals. In rural areas, where e-commerce had yet to penetrate broadly, these stores were the only places for people to shop. For these reasons, convenience stores had been the fastest-growing segment of retail in China. From 2003 to 2011,

^a Cities in China are categorized into tiers based on gross domestic product (GDP), population size, income level, level of political administration, development of infrastructure, etc. All Tier 1 cities have a GDP over US \$300 billion. Examples include Beijing, Shanghai, and Guangzhou. Tier 2 cities have GDP between US \$68 billion-\$299 billion. Examples include Chengdu, Fuzhou, and Hangzhou. Source: "China's Tiered City System Explained." South China Morning Post. <http://multimedia.scmp.com/2016/cities/>.

^b On June 30, 2017, US\$ 1 ≈ RMB 6.78. Source: <https://www.x-rates.com/historical/>.

China's convenience stores' compound annual growth rate of the sales was 24%.¹¹ In 2015, their total sales revenue was RMB 60 billion, a 13.2% growth from the previous year.¹²

In the e-commerce sector, small online retailers sold specialized products, which, when taken together, made up a considerable part of the market share. At the end of second quarter in 2017, these retailers had 15.8% market share.¹³ By relying on data analytics tailored to one or a small number of product categories, these small retailers could create a tailored shopping experience that e-commerce giants like JD and Alibaba were unable to replicate. A 2017 survey on e-commerce in China revealed that 76% of shoppers said professional customer service was an important part of their overall shopping experience.¹⁴ Chinese e-commerce platform Xiaohongshu (Little Red Book), which specialized in selling global and luxury brands to Chinese consumers, created a social community on its site for shoppers to share photos, reviews, and tips on the products they had bought. These bloggers offered valuable insights about what consumers wanted. "Based on the products people 'like,' we can spot trends and get the popular SKUs faster than other commerce sites," explained founder and CEO Charlwin Mao.¹⁵ Furthermore, Xiaohongshu's vibrant social community fostered a personal shopping experience, something that was more important than low prices to this segment of China's consumers.

See **Exhibits 5 and 6** for top 10 listed retailers in China and in the U.S.^c

Boundaryless Retail

JD coined the term "boundaryless retail" to describe retail in the digital age. According to JD, retailing had become boundaryless in the following ways. First, there were no physical boundaries to where and when consumers shopped. They could shop online, offline, on their computers, or on their mobile phones. As an example, with the advancements of artificial intelligence and big data, if a consumer sees someone wearing a dress she likes on the street, she could scan it with her phone's camera, and her phone's augmented reality app would send her directly to an online store that sold it. Second, products had transcended their traditional uses. They might come with services and/or content and collect data simultaneously. Smart speakers, such as those produced by Amazon, Google, and JD (DingDong smart speaker), for instance, functioned both as a speaker and as an intelligent personal assistant that understood, responded to, and digitized the users' requests. Such digitalization would provide insights into the users' needs and preferences. Third, retailers must move beyond traditional ways of selling online or in stores and engage with consumers to provide a personalized shopping experience. Jianwen Liao, JD's Chief Strategy Officer, explained: "The mass market has become a market of one, from everything economy to everyone economy... We live in an age of 'a thousand people, a thousand faces.'" As Liu put it, "A key challenge for any retailer in the age of boundaryless retail is to understand each consumer's preference and offer them tailored products at the right moment and time."

Boundaryless retail had brought significant changes to traditional retail's understanding of customer, context, and goods. In the past, people shopped in a few well-defined retail channels: shopping malls, boutiques, and online stores. In the age of boundaryless retail, however, people shopped from just about everywhere. Now they also shopped from their social media accounts, advertisements in their morning news feed, their smart speakers, etc. As a result, retailers faced scattered customers from all shopping contexts instead of a concentration of customers from well-defined retail channels. The amount of goods people bought had also changed. Given people now shopped across all channels, they rarely bought large quantities of goods all at once from one store, instead buying individual pieces of goods from different stores.

^c Pure platforms such as Alibaba and eBay were not included in these lists.

Boundaryless retail led JD to redefine its cost, efficiency, and customer experience. Liu elaborated:

Smart technology will drive the continuous optimization of the flow of capital, goods, and information throughout the entire retail system. On the supply side, it will increase efficiency and lower costs. On the demand side, it will deliver upgrades to customer experience by making our platform ‘understand you better than you do.’ The future of retail infrastructure will become extremely malleable, intelligent, and collaborative.

History of JD

JD, also known as Jingdong, was a Fortune Global 500 and NASDAQ-100 company based in Beijing, China. Founded by Richard Liu in 1998, it started as an electronics store in Beijing’s technology hub Zhongguancun and sold digital products: computers, communication devices, and consumer electronics. In 2003, the SARS outbreak led many people to stay indoors to avoid the risk of infection, sparking an online shopping trend that altered Liu’s business strategy. In 2004, recognizing the demand for online products, Liu closed his store and launched online shopping platform [www.jdlaser.com](http://www.jd.com), the earliest phase of the company’s evolution to JD.com.^d JD made a relatively late entry into e-commerce; several competitors had already started in China by then, including Amazon China (launched in 1998),^e Alibaba (1999), Dangdang (1999), and Newegg (2001).

Despite its late arrival, JD distinguished itself among competitors with a staunch commitment to customer service and a zero tolerance policy toward counterfeits. To Liu, the essence of retail was about operating cost, efficiency, and customer experience.

By 2007, the company processed over 3,000 orders daily. The following year it began selling general merchandise. . Since it needed a robust logistics system to support its rapid growth, the company used the \$10 million raised from venture capital firm Today’s Capital to build its own nationwide logistics network, which included warehouses, fulfillment centers, delivery stations, delivery vehicles, and after-sale services. Liu’s decision to focus on building JD’s own distribution system was unusual for an e-commerce firm: it meant JD would have an asset-heavy business model. At the same time Liu wanted JD to have complete control over quality and delivery standards in a country where logistics were notoriously inefficient and expensive: “In China, distribution costs were extremely high because goods moved around far too many times,” Liu explained. “When we designed JD’s business model, we wanted to reduce the number of movements by over one half. So when we designed a nationwide distribution system, our motto was ‘Reduce the number of movements of goods.’”

Liu developed an inverted triangle model to show how JD delivered top customer service with great efficiency (see **Exhibit 7** on the inverted triangle model). The model showed that JD aimed to develop first-rate logistics, information technology (IT), and finance capabilities. All of these capabilities rested on the foundation of JD’s teams, which ensured that the units run smoothly and delivered superior customer service. Consequently, JD was able to cut its operating costs significantly, pass the savings onto its customers, and rely on its low-price strategy to compete against its competitors. “Our logistics system must be more efficient and have lower costs than our competitors,” Liu explained. “Only then can we lower our overall costs and ultimately create more value to our consumers.”¹⁶ Furthermore, Liu believed that delivery had a significant impact on consumers’ shopping experience. “Customer

^d The company changed its domain name to JD.com in 2013.

^e Amazon China was originally called Joyo.com. It became Amazon China after Amazon acquired it in 2004.

service is an extremely important aspect of the customer experience,” he observed. “JD’s seamless and comprehensive chain guarantees the perfection of the entire customer shopping experience.”

In 2010, JD became an e-commerce firm with both direct sales and marketplace models. The team decided to open JD’s platform to third-party sellers so it could expand its range of product choices. “JD was predominately serving male consumers, but after introducing clothing and cosmetics, we slowly began to attract more female consumers. Our data showed that 60% of new registered users are female,” Liu observed.¹⁷ As of December 31, 2016, there were over 120,000 third-party sellers on JD. The GMV from this marketplace was approximately RMB 408 billion, or \$63 billion, in 2016.¹⁸

Ensuring product authenticity was important to Liu because he positioned ethics at the core of the company’s culture: “JD can help big and small companies achieve success by operating ethically. It is our responsibility to achieve success while upholding the highest standards [and] behaving in a dignified way,” he said. He added, “On some other e-commerce platforms, those sellers that sell counterfeits could charge the same prices as sellers selling authentic products, and as a result, they have money to advertise on these platforms, and sometimes drive their competitors out of the market or convert them into counterfeit sellers. The platforms can profit from these ads and may not have incentives to intervene.” Rain Long, JD’s chief human resources officer and general counsel, reinforced Liu’s vision: “Liu always insists ‘There are three types of money that JD does not make’ – first, money from counterfeits; second, money from tax evasion; third, money from deducting employees’ benefits and insurance. This is what he believes the right path to success.” Indeed, integrity was part of JD’s core value (see **Exhibit 8** for JD’s mission, vision and value). In a country where over 40% of products sold online were counterfeit as reported by Xinhua news agency,¹⁹ Long added, “JD’s rigorous quality control had helped the company earn customers’ trust over the years.”

In 2013, JD also established a finance unit called JD Finance. After several iterations of its business model, starting in 2016, JD Finance used its big data, cloud computing, and artificial intelligence to help financial institutions with finance-related business. Shengqiang Chen, CEO of JD Finance, emphasized that JD Finance would be partners, and not competitors, to financial institutions: “We are a technology company... We can export our capabilities to financial institutions; we can help them.” The unit had seven major business divisions to address different financial needs: supply chain finance, consumer finance, wealth management, crowdfunding, insurance, securities, and payments. For example, JD Finance partnered with Industrial and Commercial Bank of China (ICBC), the largest bank in the world by total assets, to enhance its businesses. Chen explained JD’s value as follows:

ICBC has significant fund for lending; it has a lot of technological abilities. But here’s how we can help ICBC. First, we have strong online capabilities. Second, we have strong understanding of Internet users and can develop products for them accordingly. In particular, we have many users born after 1990s and many small and median microenterprises. We also have an online fraud prevention system.

Shortly before its 2014 IPO, JD entered into a five-year strategic cooperation agreement and an eight-year non-compete agreement with Tencent, owner of the popular WeChat and Mobile QQ apps. The partnership gave JD access to the world’s largest mobile user base—WeChat’s over 1 billion active users. Lauded as “China’s App for Everything,” WeChat allowed its users to exchange text and voice messages, make video calls, shop online, read the news, play games, order food, book taxis, and make online payments, to name some of its main functions.²⁰ Tencent’s partnership with JD took aim at Alibaba’s dominance in e-commerce. Tencent had tried to enter the e-commerce market itself: In 2006, Tencent started its consumer to consumer (C2C) e-commerce platform PaiPai.com; in 2012, it launched its business to consumer (B2C) e-commerce platform QQ Wanggou and acquired China’s largest 3C

electronic business website Yixun. Yet Tencent's e-commerce was not successful. Under the partnership's terms, JD would have a level one entry point on WeChat, which made it easy for the app's users to shop at the company. JD also acquired 100% interests in Tencent's Paipai and QQ Wanggou online marketplace businesses. In return, Tencent would get a 15% stake in the company. Tencent later bought another 5% stake at IPO. At the time of its IPO, JD had the largest IPO of any Chinese Internet firm in the U.S. stock market. (See **Exhibit 9** on JD's stock price over time.)

JD's partnership with Yonghui in 2015, China's top supermarket that operated more than 500 local neighborhood stores, gave the company the capacity to offer fresh foods. JD invested RMB 4.23 billion in Yonghui for a 10% stake. JD created the JD Daojia app, which was linked to Yonghui and other local supermarkets. After opening the app, a customer would see the nearby supermarkets and could shop groceries from there. In 2016, JD Daojia merged with Dada, mainland China's largest crowdsourcing delivery platform. Dada's network covered 37 mainland cities and had 1.3 million registered delivery personnel, making it possible to deliver within an hour after a user placed an order.²¹ Overall, this merger further enhanced JD's online-to-offline (O2O) capabilities.

In 2016, JD formed a strategic partnership with Walmart.²² Walmart had entered China's e-commerce market in 2011 by investing in Yihaodian, an e-commerce firm. But the venture was unsuccessful because it could not compete with Alibaba's and JD's dominance in e-commerce.²³ Thus in June 2016, Walmart sold its e-commerce operations to JD for an initial 5.0% stake. The stake increased to 10.1% by February 2017. Under this partnership, JD would carry over 1,700 of the most popular items in Walmart's physical stores in China and fulfill the orders with Dada's logistics. This partnership would expand JD's offerings in imported products, and consumers could buy them directly from the Walmart store on JD. In return, with access to JD's customers, delivery network, and big data, Walmart would boost its sales and improve its customer service.²⁴

JD's Intelligent Supply Chain Management

Although economic growth had led to increasing demand for logistical services in China, the country's logistics system remained underdeveloped, costly, and inefficient. Logistics refer to the handling, transport, and storage of goods. A common complaint in the industry was that sending goods from Shanghai to Beijing could cost more than sending them to America.²⁵ Reasons behind such hefty costs included disorganized transport network, heavy tolls, and outdated warehouse facilities. First, few hubs existed to link cargo transport from one destination to another. Consequently, goods were moved around from vehicle to vehicle during the journey, and each additional transfer incurred more costs and time. Furthermore, local governments often imposed taxes on logistics companies and asked that they obtain special licenses to operate. Companies had to pay tolls on China's roads; these could make up 30% to 40% of transport costs for trucking companies.²⁶ Finally, primitive warehouse facilities also added time and costs to transporting goods: 70% of China's logistics warehouses was built before the 1990s.²⁷ Less than 20% of the warehouses had modern facilities, such as computerized tracking systems and loading bays. In fact, loading trucks by hand remained common practice.²⁸

China's logistics industry was also highly fragmented, with a large number and diverse range of providers—from self-employed couriers to full-service trucking and shipping companies.²⁹ At the start of 2014, China had 8,000 registered express delivery companies.³⁰ In 2016, the largest players, ZTO, YTO, STO, Yunda and SF Express, had market share of 14.4%, 14.3%, 10.4%, 10.3% and 8.2%, respectively. JD Logistics had about 5% market share.³¹ Fragmentation also led to poor and unreliable services.

It was China's dismal logistics infrastructure that led Richard Liu to make logistics development a priority in JD's early years. With its own nationwide logistics network, JD had complete control over

fulfillment and delivery and could offer same- or next-day delivery on most orders in China. JD's logistics system helped the company fulfill and deliver orders accurately and promptly. JD had an integrated warehouse and distribution system. Its distribution centers had three tiers: regional distribution centers, forward distribution centers, and town distribution centers. For delivery, it had many sorting centers and delivery stations. A sophisticated information system controlled every step of the order fulfillment and delivery chain. After a customer placed an order, the system determined which warehouse was closest to the customer and sent the order information there. After the warehouse received instructions from the system, its computer sent out delivery instructions to the employee processing this order. It would tell the employee the size of the box to use for packaging, the recipient's address, and the expected order delivery time. The employee would package the item and scan it to confirm that the order was complete. Behind this precise logistics system was Liu's goal in making logistics more efficient by reducing the number of times goods move around. "Delivery plays a small part in the overall speed," said Sidney Huang, CFO of JD. "Mainly, our quick delivery is a result of our warehouse network, which means the products can be extremely close to our customers. As soon as a customer places an order, I can send out the goods from the closest warehouse." Zhenhui Wang, CEO of JD Logistics, elaborated:

We call this process short chain. Short chain reduces the number of movements [of goods] and cuts down on transportation distance. Typically, in order to get merchandise from a warehouse to customer, the merchandise might be transported four to five times or more. The cost and waste are very high, and such distribution method is unreasonable. Through our supply chain service, we want to reduce the entire number of movements to one or two times. This is the fundamental difference between us and traditional logistics.

In 2009, JD launched the "211 delivery service" initiative, in which it promised customers that anything ordered before 11:00 a.m. would be delivered the same day, and anything ordered before 11:00 p.m. would be delivered by 3:00 p.m. on the following day in select cities. JD's same-day delivery service was established four years before Amazon did so in 2013. As of 2017, JD had 486 warehouses and over 110,000 logistics employees across China that served nearly 99% of the population. It fulfilled more than 92% of its orders within 24 hours. (See **Exhibit 10** on JD's nationwide logistics network.)

JD offered free shipping on most orders over RMB 99 and whose deliveries were managed by JD, which included products sold by JD or by third-party sellers that used JD's logistics. JD also offered a Plus membership program that cost roughly RMB 149 annually. Membership benefits included several free shipping coupons per month, discounts on selected products, VIP customer services, and free shipping for returned items.

Smart logistics, from unmanned warehouses to self-driving vehicles, handled distribution. JD opened its first highly automated warehouse in Shanghai in 2014. With sorting technology that could process up to 16,000 packages per hour with a 99% accuracy, this warehouse helped expand JD's ability to provide same- or next-day delivery during peak shopping periods such as June 18 or Singles Day.³² In addition, the warehouse's 100,000 square meter floor space allowed more third-party sellers to stock merchandise there and use JD's delivery network, which would also speed up delivery time. As part of the company's "Asia No.1" initiative to strengthen JD's nationwide logistics infrastructure, this highly automated warehouse was the first of a series that JD planned to build out across China.

In 2017, JD pushed automation even further by developing the world's first fully automated warehouse in Shanghai, which could process up to 200,000 items a day. A range of robots processed the receipt, storage, packing, and sorting of products. System instructions helped the robots to optimize routes and avoid collisions.³³ According to Wang, this automated warehouse would lower JD's costs by about 30% by 2027.

Because JD sourced many products by itself, the team relied on demand forecasting to determine how many of certain products to source at certain times of the year. Demand forecasting also determined how these products should be distributed in JD's warehouses. The team also relied on dynamic pricing to determine the best times for discounts and how much discounts to give during shopping festivals. The integration of sourcing and logistics management, powered by technologies such as big data and analytics, formed JD's intelligent supply chain management system (see **Exhibit 11** on intelligent supply chain management).

During its 2017 June 18 shopping festival, JD launched a robot delivery service at several universities in China—Tsinghua University, People's University, Zhejiang University, and Chang'an University. These electric-powered robots had parcel storage units and QR code-controlled smart locks. The robots travelled at around 15 kilometers per hour and could cover up to 20 kilometers when fully charged.³⁴ Each robot could carry about five packages at once, climb up a 25 degree incline, and find the fastest route from a warehouse to the customer. After the robot arrived at its destination, it sent a text message to the package's customer.³⁵

Liu believed that the future of e-commerce relied on such unmanned and highly-to fully-automated logistics. Not only would delivery robots increase efficiency, but they would enable JD to deliver to rural areas in China with poor infrastructure. "In the past, it was very hard to do business in the countryside because the logistics costs are very high," explained Liu. "We are very successful in the large cities like Beijing and Shanghai," he continued, "but [in] China's Tier 3 to 6 cities, our transactions are not as big as our market position."³⁶ In order to expand its business to the countryside, JD tested drone delivery in 2016 in four provinces: Jiangsu, rural Beijing, Sichuan and Shanxi.. The drones could fly over mountains, rivers and fields and could travel up to 100 km per hour.³⁷ "In each village, we have a delivery man," Liu explained. "He lives there and works there, and he's got a backyard. He's like a small distributor of us in that village. So we can use our drone to fly to the delivery man's backyard directly," he said. Liu estimated that drones would reduce JD's logistics costs by at least 70% immediately.³⁸

Underneath these intelligent operations lay the artificial intelligence (AI), big data, and cloud capabilities that JD had developed over the years. (See **Exhibit 12** on intelligent operations based on AI, big data, cloud, and robotics.)

In spring 2017, JD made strategic moves to spin off JD Finance as a separate organization and to establish JD Logistics as an independently-operated business unit. JD also decided to open up its integrated supply chain and logistics systems, such as warehouses, delivery, and after-sale services, to JD's marketplace sellers and other companies. Furthermore, it would use its data gathered from customers' shopping preferences to help other businesses better tailor their products to customers.³⁹ Its services had proven useful, as Sidney Huang, CFO of JD, explained: "If our marketplace sellers have 50% of their JD sales going through our warehouses, their growth rate is in the triple digits." (See **Exhibit 13** on JD's logistics services to sellers.)

Competitive Landscape

In 2015, Jack Ma, chairman of Alibaba, argued that JD's business model would be difficult to scale up in the long term and predicted "JD will eventually be a tragedy, and this is a tragedy I have warned everyone about from day one."⁴⁰ Alibaba's business model offered two e-commerce retail platforms: 1) Taobao Marketplace, a C2C retail platform for small businesses and individuals to open stores and sell to consumers; 2) Tmall, a B2C retail platform for Chinese and international businesses to sell brand name products to consumers. Both platforms had in total about 500 million actively monthly users.⁴¹ Alibaba did not own inventory or have a logistics network.

Third-party sellers' advertising on Alibaba platforms remained a key revenue source. Although the company had expanded into new markets in recent years, from digital payments with Alipay to cloud computing with Alicloud, 60% of its revenues came from advertising.⁴² To capture consumers' attention, third-party sellers had to purchase prime advertising spaces to stand out from the crowd. Alibaba set its advertising rates through a competitive auction. The higher the bid, the more likely that ad would show up high in the search results or pop up on a prominent place on the shopping platforms. For instance, in 2015, ads shown to consumers in multiple cities and in several product categories could cost up to RMB 1 million per day.⁴³ As a result, most sellers on Taobao and Tmall were not profitable. Only sellers with deep pockets could continue to stay in business on Alibaba's marketplaces.⁴⁴

Since 2013, Alibaba had made substantial investments to build its own logistics network. Jointly with the five largest express delivery companies (ZTO, YTO, STO, Yunda and SF Express), it founded China Smart Logistics Network, also known as Cainiao. As a spinoff from Alibaba, Cainiao remained controlled by Alibaba Group. It served as Alibaba's logistics arm by connecting a consortium of logistics providers, warehouses, and distribution centers. Its goal was to provide efficient e-commerce deliveries in China and international markets by using big data and AI to help delivery companies improve their service and reduce costs.⁴⁵ It used AI to spot traffic congestion and redirect delivery vehicles to the fastest delivery route.⁴⁶ Alibaba took a minority stake in YTO in May 2015. As of 2017, Cainiao had 128 warehouses and 180,000 express delivery stations in China. The firm offered same day delivery in seven Chinese cities and next-day delivery to an additional 90 cities.⁴⁷ In 2017, the company processed about 57 million deliveries daily.

In 2017 Alibaba took further control of Cainiao by investing RMB 5.3 billion (\$800.8 million), giving Alibaba 51% ownership. Alibaba also planned to invest an additional RMB 100 billion in the next five years to develop a global-logistics network. The long-term goal was to enable Cainiao to deliver anywhere in China within 24 hours and anywhere overseas within 72 hours. According to Alibaba's CEO Daniel Zhang, Cainiao enabled Alibaba to implement its New Retail strategy of blending online and offline retail and establish its retail presence in offline stores.⁴⁸

"New Retail" was a term coined by Alibaba founder Jack Ma, who first used the term in a letter to Alibaba's shareholders in October 2016, when he asserted that "pure e-commerce will be replaced by the concept of New Retail—the integration of online, offline, logistics, and data across a single value chain." He argued this model would be the future of retail in the next 10 to 20 years.⁴⁹ When an e-commerce retailer builds brick-and-mortar retail stores, it can leverage its data from its online channel to provide the right products to each location, provide customized services to its customers, and in turn reduce inventory costs and increase customer satisfaction.

As a pioneer of New Retail, Alibaba had moved swiftly to open offline retail stores. In 2016 it opened its first offline store in Tianjin, China. In 2017 it made Intime Retail, a leading Chinese department store and mall operator, private by paying \$2.6 billion and increased its ownership to 74%.⁵⁰ Headquartered

in Beijing, Intime operated a department store chain in China that sold consumer products and electronics. As of June 2016, Intime had 29 department stores and 17 shopping malls throughout China. Through this partnership, Alibaba integrated in-store shopping with mobile payment and integrated the two companies' online and offline data on customers, products and services.⁵¹

In 2015, Alibaba launched Hema Supermarket, another offline store that blended online and offline shopping.⁵² As a supermarket, fresh food market, and restaurant, Hema allowed shoppers to hand pick fresh foods such as lobsters, have them cooked for take-out, delivery, or consumption in the store's dining area, while they completed their shopping. To shop at Hema, customers downloaded the Hema mobile app, which would link to their Taobao or Alipay accounts, enabling seamless payment. (Hema did not accept any other payment methods). Since customers shopped through Hema's app, Hema gathered data on every purchase and user preferences. Hema's data analytics would then offer individual users tailored product page, while its machine algorithms planned delivery routes.

A key feature of Hema was its ability to deliver orders within 3 kilometers within 30 minutes. As of 2015, Alibaba had opened 13 Hema markets – ten in Shanghai, two in Beijing, and one in Ningbo – and each store served customers within a three-kilometer radius so Hema could provide fast and high-quality service. Furthermore, Hema also had its own logistics system, with an in-store warehouse that allowed order-fulfillment specialists to scan, pack up the goods and send them to the delivery center nearby quickly. With such efficient distribution network, each Hema store was able to fulfill thousands of orders a day.

Hema's customers made about 4.5 purchases per month and 50 times a year. Once a user opened the app, their likelihood of making a purchase was 35%. Online orders made up more than 50% of total orders. "Hema is a showcase of the new business opportunities that emerges from online-offline integration," Daniel Zhang, Alibaba Group CEO, remarked.⁵³

Like Alibaba, Amazon had also expanded its reach to physical retail stores. In August 2017, it acquired Whole Foods Market Inc. for \$13.7 billion.⁵⁴ A leader in natural and organic foods, Whole Foods had 473 stores in North America and the United Kingdom.⁵⁵ It had a \$16 billion worldwide revenue in 2017.⁵⁶ This acquisition would expand Amazon's grocery offerings online, distribute them more locally, and deliver them much faster. There were more than 1,000 Whole Foods items available on Amazon.com (Amazon Fresh, Prime Pantry, and Prime) since the acquisition. Furthermore, the acquisition allowed Amazon to bring aspects of its online retail to Whole Foods stores. As of November 2017, more than 100 Whole Foods stores sold Amazon Echo, Echo Dot, Fire TV, Kindle e-readers, and Fire tablets. Amazon had also installed Amazon Lockers at Whole Foods where customers could pick up orders made online or drop off returns.⁵⁷ In essence, Whole Foods stores served as the physical infrastructure for Amazon fulfillment and delivery operations, and in the process, provided in-store customer service.

Through Whole Foods, Amazon gathered shoppers' data on grocery buying patterns, product preferences, and more. This data, when combined with the data of the 80 million Amazon Prime members, allowed Amazon to better design grocery shopping experiences tailored to each Whole Foods store's demographics and customers' preferences. Jeremy Stanley, vice president of data science for Instacart, explained: "Compared to other e-commerce purchases, groceries are habitual and frequent. People need groceries every week."⁵⁸

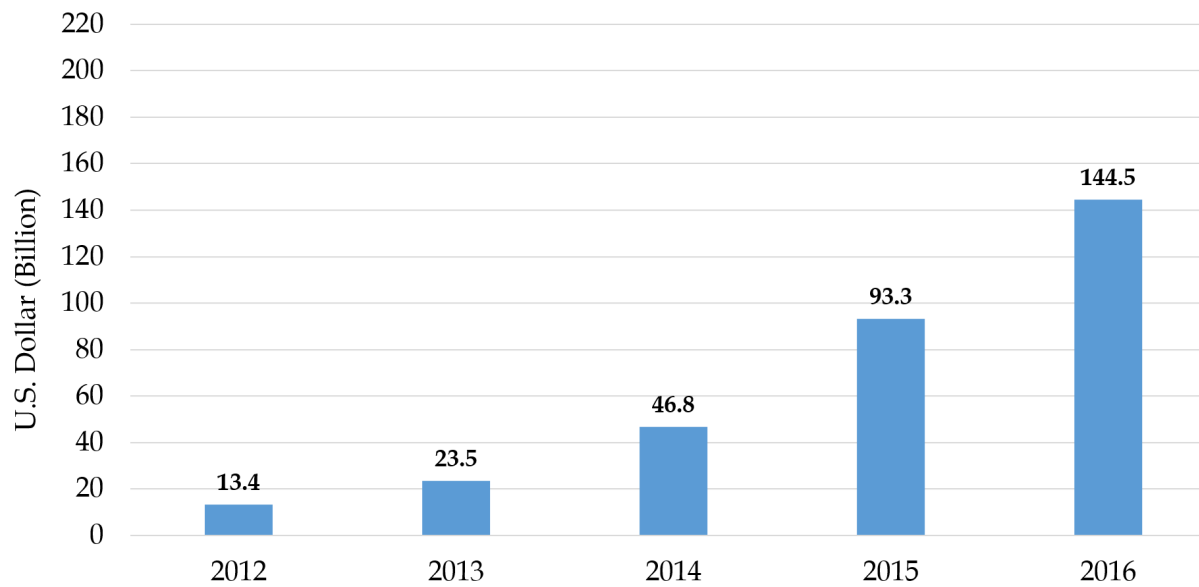
In 2016, Amazon opened its 1,800 square-foot grocery store Amazon Go in Seattle, Washington. As of 2017, the store was a beta version for Amazon employees, selling ready-made breakfast, lunch, dinner, and snacks, and grocery essentials like bread, milk, and cheese.⁵⁹ It provided a "Just Walk Out Shopping" experience with no checkout lines or physical payments. With the Amazon Go app,

customers could enter the store, take the products they wanted, and leave. The store and shelves were equipped with computer vision, deep learning algorithms, and sensors that kept track of the products customers took from or put back onto the shelves.⁶⁰ After a customer left the store, Amazon would automatically charge his or her Amazon account. Amazon Go offered a new grocery shopping experience—one with a fully automated checkout—an experience that Amazon could continue to refine with the data collected from the store's shoppers.⁶¹

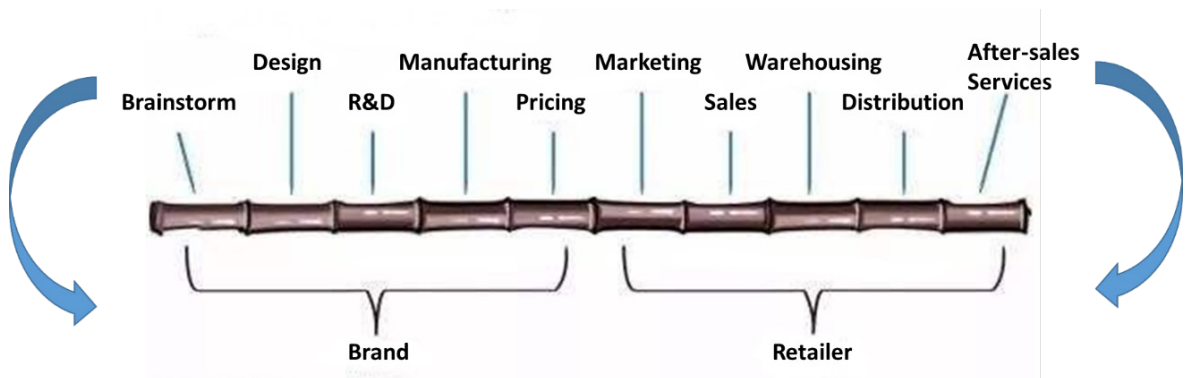
Outlook

Given Alibaba's rapid move and huge investment into Cainiao, would JD be able to sustain its competitive advantage in logistics? It was clear to Liu that to grow further, JD needed a strategy to expand offline. One option was to engage in a race with Alibaba to acquire major offline chain stores or start offline stores by itself. Similar to Alibaba, JD could use its own technology, data, and supply chain management capabilities to transform these offline stores to achieve online-offline integration to deliver much better consumer experiences. JD was also testing technologies to enable unmanned convenience store in its headquarters. It planned the launch of similar stores once the technologies were refined. Would JD be able to win the race against Alibaba given Alibaba's deeper pocket and strong technical expertise in areas such as big data, AI, cloud, and payment? As a second option, just as JD Logistics and JD Finance opened themselves up to partner with third-party firms, JD could open up its other capabilities to empower offline stores? An offline store, depending on its needs, could use any combination of JD's capabilities (e.g., sourcing, financing, pricing, big data, inventory management, and delivery) to improve its business. But would JD, a company that had followed an integrated approach to grow, be able to serve a variety of offline stores and purchase scenarios? What offline segments should JD target? Was there a third option JD should consider?

In JD's history, Liu had made a number of critical decisions that successfully brought JD, a late entrant, to number two in China's e-commerce landscape. As JD's employees were celebrating JD's 13th birthday and its success, Liu knew that another critical moment had arrived, and regardless which option he chose, JD would look very differently in a few years.





Exhibit 1 JD's Growth, 2012-2016, Based on Gross Merchandise Volume (GMV)

Source: Company document.

Exhibit 2 Liu's "Ten Segments of a Sugarcane" Theory of Retail Value Chain

Source: Company document.

Exhibit 3 JD's "Four Retail Revolutions"

	1 st retail revolution	2 nd retail revolution	3 rd retail revolution	4 th retail revolution
				
Format	Department store	Chain store	Supermarket	Boundaryless retail
Cost/efficiency	Support mass production Lower price	Achieve cost efficiency through centralized management and large- scale operation	IT technology further improves circulation and turnover efficiency	Digital & AI technologies redefine the cost and efficiency by precision of retail activities including supply chain, logistics, advertisement, etc.
Experience	Museum-style display Shopping becomes more convenient	Located closed to residential communities More convenience	Open-shelf, self-service Enhance shopping experience	Experience enhanced as retail happens at the right time, right place, with right products for the right people

Source: Company document.

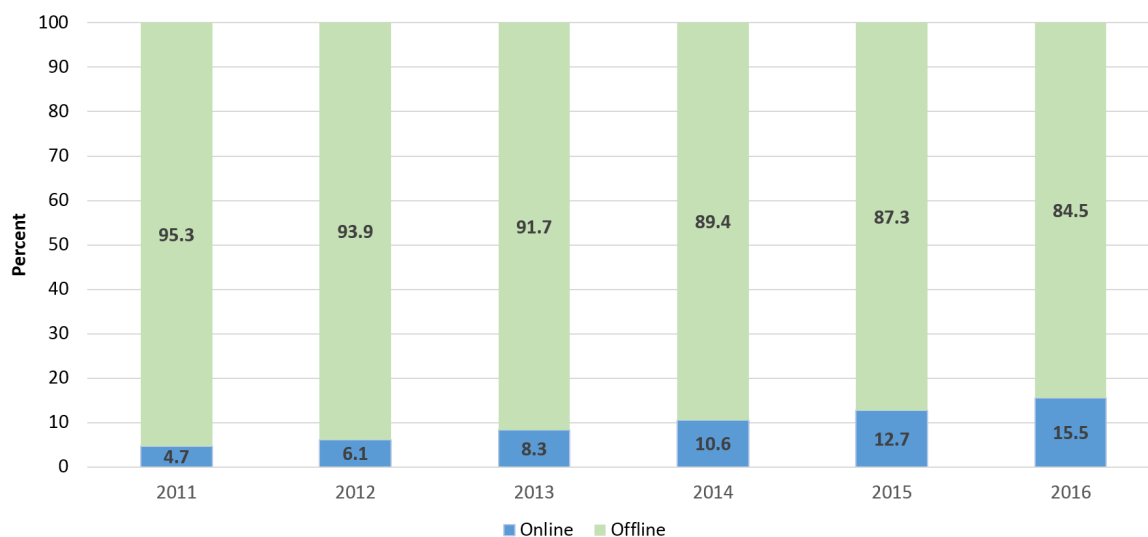
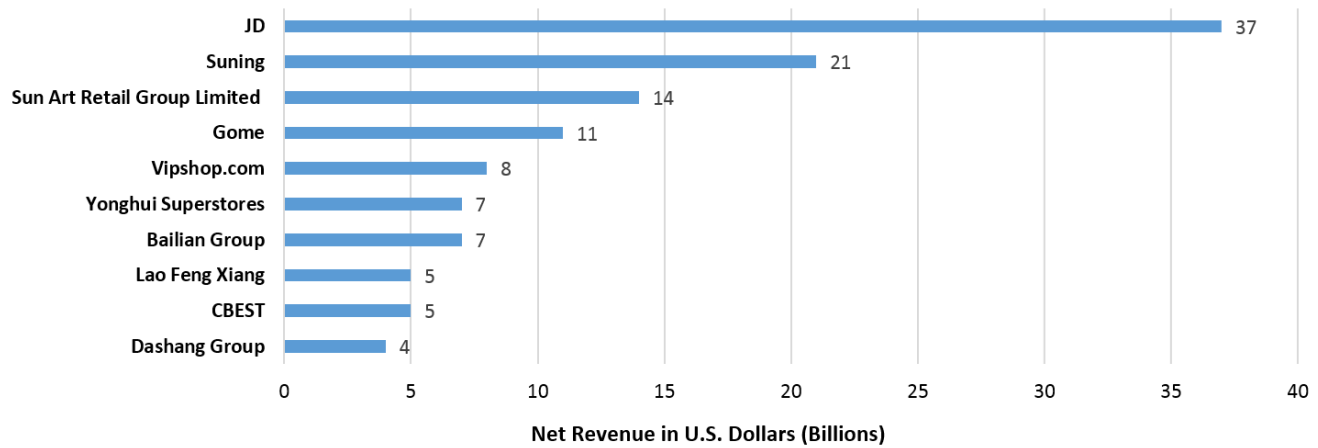
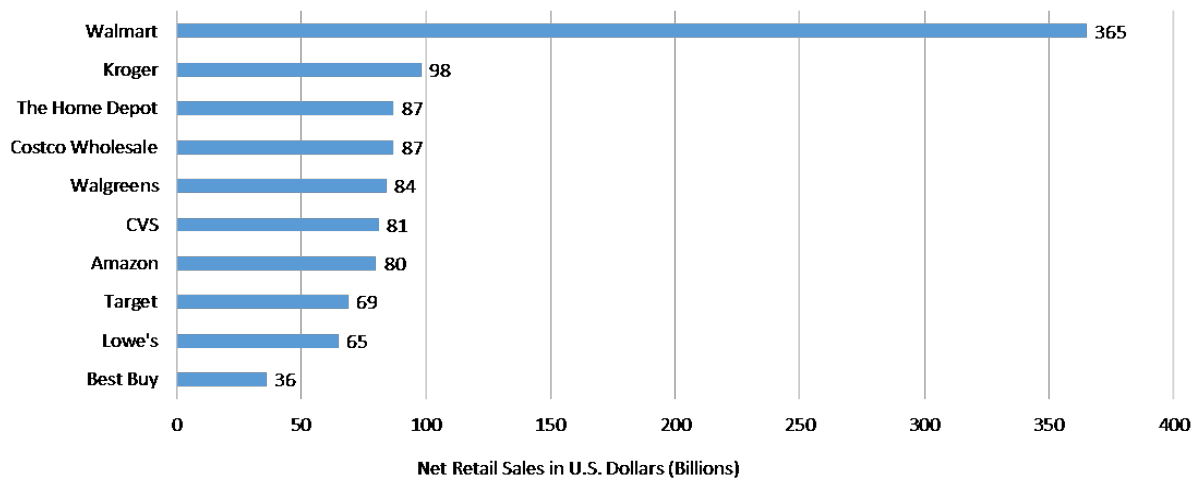
Exhibit 4 China Retail Market Size Breakdown by Online and Offline (%)Source: Quoted from the web site of the National Bureau of Statistics of the People's Republic of China, www.stats.gov.cn.

Exhibit 5 Top 10 Listed Retailers in China

Source: Company document.

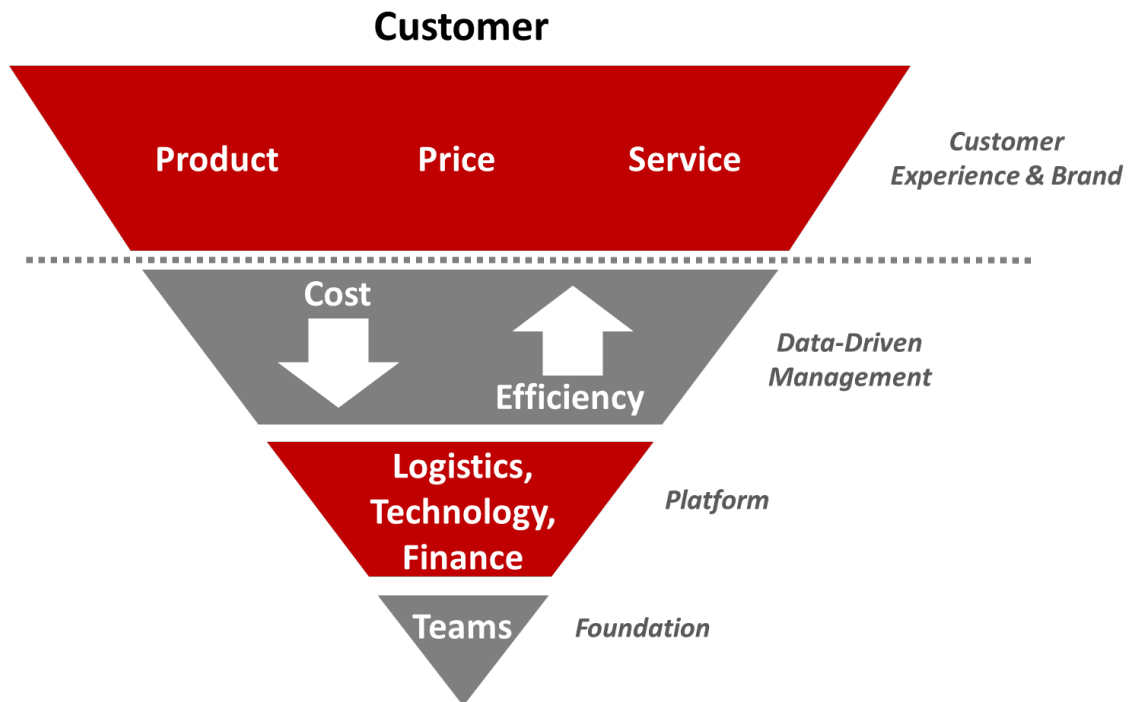
Note: Based on total net revenues for top 10 listed Chinese retailers in FY2016. The conversion rate of RMB into U.S. dollars is based on the noon buying rate in the city of New York for cable transfers in RMB per U.S. dollar as of December 31, 2016, which was RMB6.9430 to U.S. \$1.00. The year-to-year revenue growth rates were calculated based on revenues in RMB. Net revenue for JD includes discontinued operations.

Exhibit 6 Top 10 Listed Retailers in the U.S.

Source: Company document.

Note: Based on retail sales in the United States or North American segments of top 10 listed U.S. retailers, for fiscal year ending on January 31, 2017 for Walmart, January 28, 2017 for Kroger, January 29, 2017 for Home Depot, August 28, 2016 for Costco, August 31, 2017 for Walgreens, December 31, 2016 for CVS Caremark and Amazon, January 28, 2017 for Target, February 3, 2017 for Lowe's, and January 28, 2017 for Best Buy.

Exhibit 7 JD's Inverted Triangle Strategy Model



Source: Company document.

Exhibit 8 JD's Mission, Vision and Value as of 2017

<i>Mission</i>	<i>Vision</i>	<i>Value</i>
Technology shapes the life.	Become the most trustworthy company in the world.	Customer first, Integrity, Teamwork, Innovation, Passion.

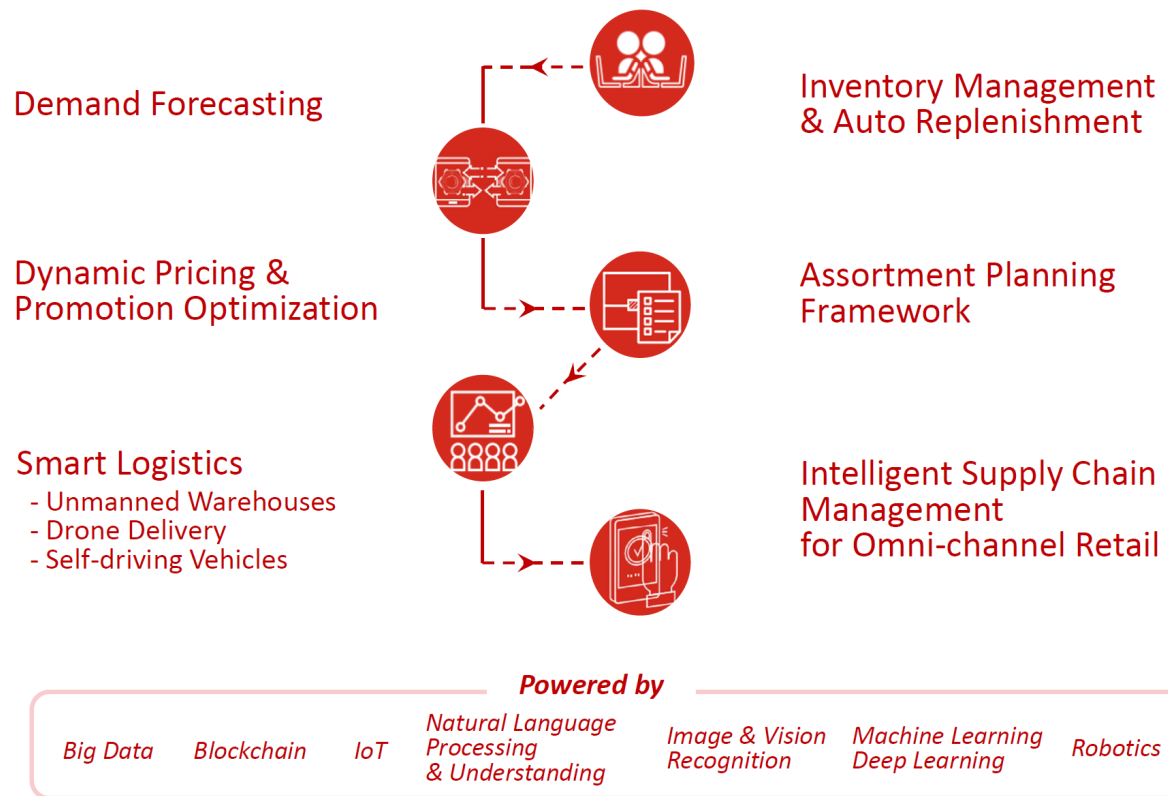
Source: Company document.

Exhibit 10 Nationwide Logistics Network as of 2017



Fulfillment centers	7 cities
Front distribution centers	27 cities
Warehouses	486 warehouses
Gross Floor Area (GFA)	~10 million square meters
Self-built mega warehouses	13 projects in 9 cities
Geographic coverage	Almost all counties & districts in China

Source: Company document.

Exhibit 11 Intelligent Supply Chain Management

Source: Company document.

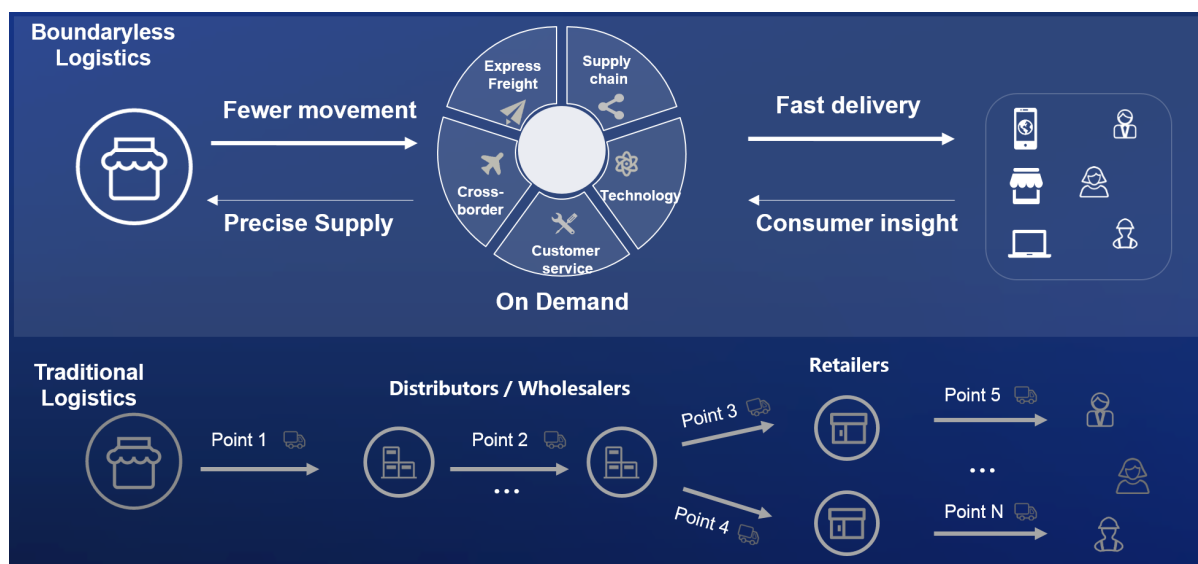
Exhibit 12 Intelligent Decision-Making Based on AI, Big Data, Cloud, and Robotics



Source: Company document.

Note: OMS: order management system; WMS: warehouse management system; WCS: warehouse control system; TMS: transportation management system.

Exhibit 13 JD's Logistics Services to Sellers



Source: Company document.

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