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Pinduoduo

Pinduoduo is not a conventional company. If you close your eyes and visualize the next stage for Pinduoduo, it would be...a combination of Costco^a and Disney.^b

-- Colin Huang, Chief Executive Officer, Pinduoduo¹

Colin Huang, the founder and CEO of Pinduoduo Inc., China's fastest-growing e-commerce platform in history,² was fond of taking long walks to think and find inspiration. On a humid summer afternoon in 2019, Huang stepped out of his office at the company's headquarters in Shanghai to let his mind flow. As he strolled through the park nearby, Huang pondered which direction his company should head after its viral success.

Founded in 2015, Pinduoduo, also known as PDD, was a \$29 billion³ rising Chinese e-commerce platform. The company's rapid development helped it debut on the Nasdaq in July 2018, only three years after its inception, raising \$1.63 billion.⁴ (See **Exhibit 1** for PDD's stock price performance.) Pin (拼) meant "together," also referring to a team purchase format, and duo (多) meant "more," so the name Pinduoduo conveyed the message of enjoying "more savings" and "more fun" "together."⁵ By leveraging China's ubiquitous social network WeChat and its mobile payment system, PDD allowed shoppers to share products, invite friends to form shopping teams, and purchase together at discounted prices. The PDD app, in particular, gained popularity among consumers in China's less affluent cities, given the company's ability to offer products at low prices.

^a Costco Wholesale Corporation, headquartered in Issaquah, Washington, U.S., operated a chain of wholesale membership warehouse clubs in multiple countries. The company was known for bulk-selling quality products at low prices (<https://www.costco.com/about.html>, accessed September 2019).

^b The Walt Disney Company was a mass media and entertainment conglomerate. Headquartered in Burbank, California, U.S., it had operations worldwide. (<https://www.thewaltdisneycompany.com/about/>, accessed September 2019).

Professors Feng Zhu and Krishna G. Palepu, Researcher Bonnie Yining Cao (Asia-Pacific Research Center) and Associate Director Dawn H. Lau (Asia-Pacific Research Center) prepared this case. The casewriters would like to thank Donald Gao, MBA 2008, for his assistance to the case. It was reviewed and approved before publication by a company designate. Funding for the development of this case was provided by Harvard Business School and not by the company. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

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Annual active buyers^c on PDD rose 50% to 443.3 million in the 12-month period ending March 31, 2019, from a year ago,⁶ accounting for 31.6% of China's population of 1.4 billion. That outnumbered the 310.5 million active buyers on JD.com (JD) in the same period, making PDD China's second-largest e-commerce company by user base, trailing behind Alibaba's 654 million.⁷ In terms of last-twelve-month (LTM) gross merchandise volume (GMV),^d PDD grew 181% to 557.4 billion yuan (\$83.6 billion),^e as of March 31, 2019.⁸ This, however, was still behind the 5.73 trillion yuan recorded by Alibaba in the same period and the 1.68 trillion yuan of JD in 2018.⁹ PDD's revenue jumped 228% year-over-year to 4.5 billion yuan, resulting in an LTM monetization rate^f of 2.9%,¹⁰ compared with Alibaba's 4.3%.¹¹ As the platform's massive user base continued to generate market demand, more merchants opened stores on PDD to offer "value for money" products. The number of active merchants^g jumped to 3.6 million by the end of 2018, from 1.7 million half a year ago.¹²

The fast growth was partly boosted by PDD's heavy investment in marketing and branding, such as through coupons and promotions. As the company spent about 103% of its revenue for sales and marketing,¹³ net losses widened to 1.88 billion yuan in the first quarter of 2019 from 281.5 million yuan in the same period of 2018.¹⁴ (See **Exhibits 2a** and **2b** on PDD financials.) Some reports argued that the company was effectively "buying revenue not earning it."¹⁵

As Huang walked along, the 39-year-old CEO found himself standing at a crossroad in Shanghai literally, and his company figuratively. Given the large user base PDD already had, was it time for the company to reduce its marketing expenses and focus on generating profits for its shareholders? With PDD's strong growth, the competition with the incumbents Alibaba and JD also became increasingly intense. How should the company make its competitive advantages more sustainable? In addition, Huang also could not ignore the influx of business plans from startups abroad. They claimed that they were the PDD in their local markets and invited Huang to invest. Was taking the company global the next growth opportunity for PDD? Would its model of integrating team purchase and entertainment, coined as "Costco + Disney," flourish on foreign soil?

China's E-Commerce Market

Prior to PDD, China, the world's fastest-growing and biggest online retail market, had long been dominated by the duopoly of Alibaba and JD, which seemed to be unassailable. The two companies accounted for 74.5% of China's e-commerce market, as of June 2018.¹⁶ Other platforms or specialized e-commerce companies were far from challenging the two market leaders on all fronts.

The country's online retail sales almost quintupled from 1.85 trillion yuan to 9.01 trillion yuan in 2013-2018.¹⁷ China's e-commerce sector, surpassing the U.S. in 2013, was estimated to reach \$1.99

^c Annual active buyers: the number of user accounts that placed at least one order on the platform or through social networks during the 12 months, regardless of returns or refunds.

^d GMV: metric often used by e-commerce companies as a measurement of growth. It was the number of units sold multiplied by the price of each unit sold, not revenue to the company.

^e 1 CNY=0.15 USD.

^f Monetization rate: the revenues expressed as a percentage of total GMV for a given period.

^g Active merchants: the number of merchant accounts that shipped at least one order to a buyer on the platform in the given period, regardless of returns or refunds.

trillion in 2019, accounting for 55.8% of the global online retail sales.¹⁸ (See **Exhibit 3** on China's e-commerce sales.)

Founded in 1999, Alibaba started China's first global business-to-business (B2B) e-commerce portal Alibaba.com to connect Chinese manufacturers with buyers abroad. It expanded the services to two online retail platforms: Taobao, a consumer-to-consumer (C2C) e-commerce marketplace, in 2003, and Tmall, a business-to-consumer (B2C) portal for Chinese and international companies to sell branded products to consumers, in 2008. They led the market in their respective business segments.¹⁹ In the 12-month ended March 31, 2019, Taobao and Tmall recorded GMV of 3.1 trillion yuan and 2.6 trillion yuan respectively.²⁰

Alibaba's Taobao and Tmall

When Alibaba's founder Jack Ma launched Taobao in 2003, the C2C platform was created to compete with eBay, the company's biggest rival in China. The Hangzhou-based company had taken advantage of being near the city of Yiwu, which was home to the world's largest wholesale market for small consumer products.²¹ Those small businesses and entrepreneurs became the first group that went on Taobao to sell a broad category of their products to Chinese consumers. The platform offered an embedded instant messaging system in its website for consumers and sellers to communicate directly.

Taobao defeated eBay, forcing it to withdraw from China in 2006,²² and then became the country's biggest e-commerce platform. Alibaba did not charge commissions for transactions on Taobao, and its main source of revenue was advertising from third-party sellers. Merchants bid on search keywords via an auction and paid for advertising spaces on its site.²³ As Taobao continued to grow, Alibaba launched the B2C platform of Tmall to differentiate listings by its merchants, who were either brand owners or authorized distributors from Taobao's C2C merchants. Taobao users could access merchants on Tmall, but not vice versa. The competition between merchants was stiff. Alibaba often favored bigger brands, for example, by giving them preferential access to advertising spaces for promotional events.²⁴ About 80% of Alibaba's GMV came from its 200,000 big merchants on Tmall, while the remaining 20% was generated by 9 million smaller merchants on Taobao.²⁵ Alibaba's customer management revenue, which included advertising and fees charged to merchants, reached \$21.7 billion in 2018, accounting for 58.8% of its China commerce retail business, while commission fees contributed 25%.²⁶

JD

JD was Alibaba's closest rival since the early days of China's e-commerce. The company started its business as a four-square-meter retail booth selling electronics in Beijing's technology hub of Zhongguancun in 1998.²⁷ Its founder Richard Liu moved the offline business online during the SARS pandemic^h in 2003. It began as a retailer by sourcing computers, consumer electronics and communication (3C) products from manufacturers, holding inventory and selling directly to consumers online. The average prices of 3C products were usually high, and JD's direct sales strategy was regarded as a guarantee of quality and authenticity. The company had a clear competitive edge in the 3C online shopping space, with 59.2% market share of China's 3C GMV on B2C websites.²⁸

It was not until 2011 that JD opened itself to third-party sellers, a strategy similar to Amazon, expanding to a broad range of product choices. Its 60,000 third-party sellers achieved about 44% of the

^h Severe acute respiratory syndrome (SARS) was a viral respiratory illness, first reported in Asia. During the 2003 outbreak, a total of 8,098 people were infected worldwide, of whom 774 died, according to WHO (<https://www.cdc.gov/sars/about/fs-sars.html>, accessed September 2019).

company's revenue in 2014.²⁹ JD went public in the U.S. in the same year³⁰ and announced a partnership with China's top supermarket Yonghui in 2015.³¹ While JD's GMV was only 12% of Alibaba's in 2013, it rose to about 30% by 2018.³²

Rise of Express Delivery

The e-commerce boom pushed forward the development of China's logistics and express delivery market. In 2009, China allowed private delivery companies to offer courier services. By 2014, the industry had a low concentration rate, with 8,000 registered delivery companies.³³ The number rose to 20,000 in 2018, as an estimated 130 million e-commerce parcels were delivered daily.³⁴ China's express delivery market accounted for almost 40% of the total delivery volume globally.³⁵ The costs of China's major express couriers fell sharply in the 2013-2017 period.³⁶ The country's average intercity package delivery time was 56.84 hours in 2018.³⁷

In the express delivery front, the competition between Alibaba and JD increased as well. Over the years, Alibaba had invested heavily in building and growing its own logistics network with third-party providers. In 2013, it founded China Smart Logistics Network, known as Cainiao, with the country's five biggest express delivery companies: ZTO, YTO, STO, Yunda, and SF Express.³⁸ As of 2016, Alibaba's Cainiao, of which it held 51% of shares,³⁹ had 128 warehouses and 180,000 express delivery stations in China.⁴⁰ Alibaba, in 2019, invested \$693 million for more than 14% of shares in STO, its fourth investment in China's courier sector after acquiring minor shares in ZTO, Best Inc., and YTO.⁴¹

Unlike Alibaba, JD opted to build its own nationwide logistics and delivery infrastructure, allowing it to offer the same- or next-day delivery on most orders in major cities. Employing over 110,000 logistics staff, JD had 486 warehouses as of 2017, serving almost the entire Chinese population.⁴² (See **Exhibit 4** on company comparisons.)

PDD's History

The e-commerce newcomer PDD was the latest startup founded by Huang, who was born in 1980 in Hangzhou, now home to Alibaba and many Chinese tech companies. Huang started his career at Google's Mountain View, California headquarters as a software engineer in 2004 after obtaining a master's degree in computer science from the University of Wisconsin-Madison. Huang created the consumer electronics B2C online platform Ouku.com in 2007 and sold it in 2010. He then founded Xinyoudi Studio in 2011 to develop and operate online games.⁴³

Huang first conceived of the idea of PDD in part by observing the changes in China's e-commerce landscape, as he took a year off in 2014 to recover from tympanitis, a form of painful ear infection. Huang noticed that China's high penetration of mobile devices had started to change consumers' behavior, cutting their attention span, and enabling the proliferation of mobile purchases. The country's mobile commerce started in 2010 as Alibaba launched the mobile Taobao app.⁴⁴ Five years later, the country's mobile internet users reached 620 million.⁴⁵ In the same year of 2015, the most frequently used device of China's new internet users was the mobile phone, with a usage rate of 71.5%, up 7.4% from a year earlier.⁴⁶ Meanwhile, the usage rate of PC declined to 39.2% in 2015.⁴⁷

Huang said the timing was "perfect" and elaborated:

PDD emerged at a time when the e-commerce industry was entering the mobile era from the PC era, when China's infrastructure and logistics systems were well established,

and when many Chinese manufacturers also had excess production capacity after global production started to move out of the country.

Gathering his team with experience in both e-commerce and games, Huang raised \$8 million in seed capital to first start a fruit-selling retail company, Pinhaohuo, in a team purchase model.⁴⁸ Huang found that fruit was a niche market at the time, as most Chinese e-commerce companies focused on non-perishable goods. As the fruit business quickly took off with millions of daily orders, Huang and the team expanded it to an online platform, PDD, focusing on having third-party merchants sell a comprehensive selection of “value for money” products. The two companies merged in 2016 with all the products eventually offered entirely by third-party merchants.

Leveraging Tencent’s WeChat

The rapid growth of PDD partly was attributed to its strategy of leveraging WeChat, Tencent’s social networking app. “Everyone thought there were no opportunities left in China’s e-commerce in 2015, with Alibaba and JD accounting for most of the market share. We saw an opportunity with Tencent’s WeChat,” said Huang.

Founded in 1998 as a messaging service provider, Tencent, after many transformations, became China’s leading social networking and online gaming company. In 1999, the company launched its first product QQ, a PC-based instant messaging service, and introduced its smart device messaging service WeChat in 2011. By the end of the first quarter in 2019, Tencent’s monthly active users (MAUs) exceeded 1.1 billion, while the users of the mobile version of its QQ were over 700 million.⁴⁹

Tencent’s mobile payment system, WeChat Pay, also became ubiquitous in China. Its MAUs reached over 800 million by the first half of 2018,⁵⁰ making it one of the world’s biggest mobile payment systems. In the same year, one billion transactions took place on Tencent’s payment system on average every day.⁵¹ WeChat Pay competed with Alipay, developed by Alibaba. The two systems together had a 93.3% penetration of the entire mobile payment population in China.⁵²

PDD started to sell products through its WeChat Official Account in 2015. The official account, similar to a merchant’s official Facebook Page, served as an interface between the company and its followers.⁵³ It allowed PDD’s followers to access its online shopping mall. PDD also used WeChat Pay to simplify payment processes. By January 2016, PDD had over 10 million paid customers.⁵⁴ PDD shortly developed its mini-program, basically an app within WeChat, which enhanced the functions of the official accounts and allowed companies to push promotional messages directly to the users.⁵⁵ Beginning in late 2017, PDD focused on gradually migrating customers accessed through WeChat to its own mobile app in order to increase user engagement and provide a more consistent experience.⁵⁶

As users shared products and recommended new customers via Tencent’s WeChat and QQ, PDD generated a considerable amount of buyer traffic. Within two years since inception, PDD recorded more than 100 billion yuan of GMV, while it had taken Taobao and JD five and ten years respectively to achieve the same milestone.⁵⁷ PDD’s social e-commerce model also helped increase the daily customer usage frequency, and the average time spent on the app was second only to the Taobao mobile as of November 2018.⁵⁸

On the PDD platform, each item had two prices displayed. Shoppers could either buy a product alone at the regular price as an “individual purchase” or click the “team purchase” option for a discounted price. The shipping fee was included in both prices. The shoppers, usually already on Tencent’s WeChat or QQ, could easily share the link of the product with their friends on those

platforms (essentially “pitching the product”) and invite them to form a shopping team. Once shoppers started a team purchase or joined a team, they would pay via WeChat Pay by default or other online payment systems such as Alipay. It usually only took two people to form a team, making it easier to complete a purchase. If a shopping team was formed within 24 hours, the order would be confirmed, and the products would be shipped to shoppers in the same team to their respective addresses. Otherwise, the shoppers would get a full refund. Shoppers also had an option to join an existing team initiated by strangers on PDD. (See **Exhibit 5** on PDD’s team purchasing process.)

PDD found that shoppers’ attention spans were short and fragmented in the mobile era, and designed its user experience differently from the traditional search-based e-commerce platforms like Alibaba and JD in China, or Amazon in the U.S. It intentionally removed the shopping cart feature on its home page to shorten the purchasing process. The company believed that a “virtual bazaar” that was targeted yet encouraged discovery would help shoppers better satisfy their fuzzy and, sometimes, spontaneous needs, whilst making the experience fun and enjoyable, according to Lei Chen, the company’s co-founder and chief technology officer. “We are more like Facebook than Google in the e-commerce world. We push our product recommendation feeds to the consumers rather than wait for them to search on our platform. We are proactively trying to find out what our consumers want to buy,” said Chen.

PDD’s coupons and flash sales also worked well in tandem with Tencent’s social networks, as buyers spread information about hot deals through their online groups. Sellers on Alibaba’s Tmall and Taobao, on the other hand, did not have direct access to sell products via WeChat.

Tencent had been interested in the e-commerce business for many years. It was one of the early investors in PDD, participating in its Series B financing in 2016 and leading the Series C round in 2018.⁵⁹ It held 17% of PDD shares by the end of 2018,⁶⁰ while it was also an investor in JD with 17.8% of holdings,⁶¹ as well as a few other Chinese e-commerce companies, including the flash sales platform VipShop and online fashion retailer Mogu Street.⁶² David Liu, Vice President of Strategy at PDD, elaborated: “Tencent has a mutually beneficial relationship with us. Tencent needs us as a partner in its ecosystem to provide retail product services to its users.” The two companies signed a five-year strategic cooperation framework in February 2018 to strengthen collaborations in areas of payment solutions, cloud services, and user engagement.⁶³

Vision and Core Values

In a letter to shareholders, Huang described his vision for PDD, just a few weeks ahead of the company’s initial public offering (IPO) in 2018:

We envision PDD to be an organization that reports to the public. It should create value for the public, rather than being a show-off trophy for a few or carrying too much personal color. We want it to be an independent organization that brings value to society with its unique organizational structure and corporate culture. Most importantly, it should continue to strive to better itself.⁶⁴

As the name of PDD stood for value and happiness for everyone, Huang summarized the company’s core values as “Benefit All,” “People First,” and “More Open.” (See **Exhibit 6** on PDD’s

values.) The ex-Gogler analogized PDD as an Android operating system,ⁱ which might be “a little chaotic at the initial stage of the development but more dynamic.”

PDD's Characteristics

Hundreds of Chinese startups attempted to replicate PDD's business model after noticing its early success. Huang, who owned 46.8% shares of the company at the time of IPO,⁶⁵ laid out his thoughts on why none of them was able to catch up with PDD:

First, it is because of our scale and rapid growth rate. The copycats invested a lot in marketing. However, to some extent, they were actually educating and nurturing the market for us. Users would only come to us, the market leader. Second, we are a team of experienced entrepreneurs, with most of us financially secure before founding PDD. It allows us to consider more from the customers' perspective.

Costco + Disney

PDD's executives compared the company to a hybrid of Costco and Disney in the U.S., where users can enjoy low prices while being entertained.⁶⁶ Although PDD had no immediate plans of charging membership fees or creating its own private labels like Costco, the executives found the two companies similar in aggregating demand and offering “value for money” products. PDD also focused on providing selected stock keeping units (SKUs) within each product category, said David Liu.

The concept of blending social or bulk buying with online shopping was not novel outside China. Instagram allowed users to shop online by clicking on products tagged in a post of its “shoppable photos.” Groupon pioneered the idea of group buying with discounts when it was founded in 2008.⁶⁷ “These platforms are different because they do not incentivize users to share, and the prices they pay remain the same,” observed Xin Yi Lim, Director of Investor Relations at PDD. The company noticed another difference: group buying platforms mainly offered services, such as restaurants or salon deals. “For those selling services, one often finds that good quality service providers would simply connect with buyers off the platforms directly after their first purchases,” Lim added. “PDD facilitates the discovery and sale of physical goods. Our team purchase model drives economies of scale and builds stickiness through products, such as fruit, where are much higher repeat purchase frequency.”

The Disney analogy illustrated the company's goal of making shopping more fun and engaging. With its gamification features such as lotteries and coupons embedded into the shopping experience, PDD was able to acquire new users and engage with the existing ones at a low cost. In some games, buyers could invite their friends to help bargain or obtain free merchandise. Each click of the shared product link by a friend would slash the price by a small random amount. By gathering enough friends within 24 hours to slash the price, the shopper could get the product for free. It took about 70 shoppers' clicks for one shopper to get a free rice cooker priced at 780 yuan, and five clicks for an 88-yuan umbrella.⁶⁸ (See **Exhibit 7** on PDD games.)

The games were also developed to serve other purposes. For example, PDD created a game called Duo Duo Orchard embedded in the app, where shoppers could grow virtual trees. Users could receive free boxes of real fruit as a reward when their trees were harvested. It helped increase the average time that PDD's daily user spent on the app to 22 minutes, as of June 2019.⁶⁹ The free fruit rewards were seasonal, most of which were excess supplies that PDD aided farmers to distribute. Duo Duo Orchard

ⁱ Open-source mobile operating system developed by Google.

built trust with consumers, who were not used to purchasing fresh products online, by letting them try out real fruit from PDD for free, according to the CTO Chen.

“Value for Money”

The four-year-old PDD built its initial reputation on selling products at extremely low prices, making it appealing to price-sensitive consumers. The products sold on the platform ranged from 6 yuan (\$0.9) for 20 packs of eggrolls to 278 yuan (\$42) for one vacuum robot. The prices were all inclusive of shipping fees borne by the merchants. The delivery time of two to three days⁷⁰ were longer than JD, which had its own logistics networks, but comparable to Taobao and Tmall.

PDD actively promoted products with heavily discounted prices to create bestselling or viral items. This strategy attracted traffic, and users were more likely to shop for other products as they stayed on the app longer. “Many Chinese manufacturers today face the mounting pressure of destocking. By slashing the prices of their products, they could sell quickly on PDD to bring down the cost of warehouse storage and redundancy. And people usually cannot imagine how low the production costs could be in rural China or small cities,” said Victor Tseng, the company’s spokesman.

Given the competitive prices, PDD was able to effectively increase its reach in China’s lower-tier cities,^j a large underpenetrated market with strong growth potential. Rural customers spent 1.37 trillion yuan on e-commerce in 2018, increasing 30% year-on-year.⁷¹ The lower-tier city consumer base made up 73% of China’s population and could account for almost two-thirds of China’s annual consumption increase to an estimated \$9.7 trillion by 2030.⁷²

PDD’s typical user profile was a Chinese female from the third or lower-tier cities. As of November 2018, about 51.3% of PDD users were women, while 52.2% were from those areas.⁷³ The figure was compared with 38.9% of JD users in the same area.⁷⁴ It was a demographic that was recently exposed to the mobile internet and less brand conscious, yet with disposable income on the rise. Meanwhile, PDD had the penetration of 12% in the first-tier cities, compared to 19.9% of JD and 13.9% of Taobao mobile.⁷⁵ (See **Exhibit 8** on user comparisons.)

PDD’s executives opposed stereotyping though, because consumer demands vary under different scenarios. The consumers from first- and second-tier cities did not always need to buy branded products but sometimes preferred “value for money” products, said Tseng. The company started to see an increase in its GMV contribution from first- and second-tier cities since the beginning of 2019.

As PDD helped merchants effectively reach a different consumer segment, many opted for multi-homing—selling products on PDD, Taobao or other platforms simultaneously. The trend started with small and medium-size sellers that had difficulty in getting traffic on Alibaba’s platforms, with bigger brands following suit.

Agricultural Supply Chain

The sale of fruit and other agricultural products, an uncharted territory at the time of PDD’s inception, set it apart from its rivals in the early years, according to Huang. Online sales of China’s agricultural products rose 34% in 2018 to 230.5 billion yuan from a year earlier, but it accounted for

^j China’s city tier system categorized and measured cities based on the gross domestic product (GDP), politics, income level, population, etc. First-tier cities included Beijing, Shanghai, Guangzhou, and Shenzhen, all with a GDP over \$300 billion. Second-tier cities had GDPs between \$68 billion and \$299 billion. (“China’s Tiered System Explained,” *South China Morning Post*, <http://multimedia.scmp.com/2016/cities/>, accessed September 2019).

only 7.3% of the country's agricultural output, official data showed.⁷⁶ "How many e-commerce companies would like to divert the platform traffic to agricultural products? It is a little crazy. They are basically perishable goods with thin margins," said Tseng.

Whilst the overall consumer experience could still be improved, PDD was successful in generating strong demand because of the compelling value it offered through aggregating demand via the team purchase model and sourcing directly from farmers. "Some fruit sold on PDD may become bruised or damaged by the time they get to the consumers, say two out of 10 apples may arrive bruised or damaged in major cities," explained Tseng. "So you may see some negative reviews from consumers, but overall they will keep buying on our platform because they figure that, averaging out, it is still cheaper than the city's fruit stands which might sell 10 apples for 35 yuan versus 15 yuan on PDD."

Selling on PDD helped farmers bypass multiple layers of distributors in the offline retail chain and reach consumers directly. Rural population accounted for 41% of the country's demography as of 2018.⁷⁷ As the platform aggregated demand and simplified the value chain, it not only cut the prices for consumers but also raised the profits for farmers. (See **Exhibit 9** for an example.) PDD also launched new initiatives to help farmers estimate demand and better plan their harvest. By setting aside time for perishable products to ripen on their way to consumers and by improving packaging, farmers reduced supply chain costs further by eliminating wastage and avoiding the need for a cold chain delivery system.

Through its Duo Duo Farms initiative, the platform also offered guidance and training to farmers for free, including educating them on planting and on consumers' product preferences. By the end of 2018, PDD had supported 62,000 "small scale entrepreneurs who returned to [their] villages" to start businesses and reached 7 million Chinese farmers.⁷⁸ The GMV of agricultural products on PDD rose 233% to 65.3 billion yuan in 2018 year-over-year, making it one of the largest e-commerce platforms for agricultural goods in China.⁷⁹

C2M and New Brand Initiative

PDD also worked with manufacturers in China to drive a Consumer-to-Manufacturer (C2M) model. It provided manufacturers with direct-to-market consumer insights to improve supply chain efficiency. PDD's team purchase model aggregated user demands and created products with viral sales or best sellers. As the manufacturers became more attuned to consumer demands, they would optimize their supply chain to reduce the production and inventory costs, and further lower the prices to consumers. Take Corou, a tissue paper manufacturer based in central China, as an example. By leveraging the data analysis provided by PDD, the company cut the size of its tissue paper to meet consumer needs and moved the production line closer to a port. It also focused on two or three core products to boost efficiency.⁸⁰ As a result, the tissue-maker trimmed the logistics expenses of raw material by 97% and recorded 1.65 million transactions within two years after it started selling on PDD.⁸¹

PDD also supported some manufacturers to build their own brands, as it analyzed the data collected from user behavior and social networks. In December 2018, PDD launched its New Brand Initiative with 20 pilot manufacturers and aimed to expand to 1,000 by the end of 2020.⁸² "Basically, we aggregated the traffic from the demand side, and then asked the supply-side manufacturers to tailor-make the value-for-money products for our platform," explained the CTO Chen. Some of the suppliers

were original equipment or design manufacturers (OEMs or ODMs)^k that either had little access to the end customers or had massive overcapacity. (See **Exhibit 10** for an example.)

Although PDD's C2M model was still at an early stage of development, the executives envisioned creating models to simulate consumer preferences and trends, for example, an algorithm that estimated whether a product could become a bestseller. The company's co-founder overseeing operations Dada summarized: "By innovating on business model and applying technology, PDD, with manufacturers on our platform, is restructuring the way products are distributed today."⁸³

Distributed Artificial Intelligence (AI)

New technology played an important role in PDD: more than 50% of its 3,700 employees were engineers at the end of 2018.⁸⁴ While Alibaba and JD both invested heavily in big data analysis and machine learning, PDD, with its browsing-based model, focused more on social interactions to understand complex user behaviors. Its recommendation algorithm, which centered on each user as a distributed node, included similar user activities and their interactions with friends. It also tagged and prioritized the browsing history of the users' friends, driving the clustering of purchases.⁸⁵

"People often shop without a clear idea but browse for fun online. Every consumer is an independent individual. Those with similar needs are likely to form a group. That means our algorithm values localized information very much with a distributed nature," said the CTO Chen. Compared to the search-based platforms, PDD's product recommendations were timelier and more relevant, even to those inactive users, according to Chen. The large amount of data on user-to-platform and user-to-user engagement helped PDD learn more about its users, therefore improving its ability to tailor the user experience further.

In 2019, the company created its proprietary system for e-waybills, basically electronic shipping labels tracking package movement. It grew to become China's second-largest e-waybill system within months of its launching.⁸⁶ About 40 million parcels per day were sent out from PDD in the first half of 2019.⁸⁷ It allowed the company to monitor and control shipment-related data better.⁸⁸

Intellectual Property Rights Protection

PDD's popularity also attracted infringers and counterfeit sellers, a major challenge since its founding. The company blocked over 30 million suspected intellectual property (IP) infringing links and shut down about 60,000 stores on its platform in 2018.⁸⁹ Despite these efforts, the U.S. Trade Representative Office noted the alleged sales of counterfeit products on the PDD platform and added it to its list of "notorious markets" in 2018.⁹⁰ Alibaba's Taobao was also on the list, as the phenomenon was prevalent in China's e-commerce industry.

PDD had developed several strategies to combat the problem. First, the company endeavored to elevate the entry threshold: It conducted reviews for all the merchants who planned to open stores on the platform. Prospective merchants were required to submit qualifications and permits, put down deposits and pass a biometric verification including facial recognition.

^k Original Equipment Manufacturers (OEMs) produced parts and equipment for other companies and resold them under their own brand; Original Design Manufacturers (ODM) designed and manufactured products that would eventually be rebranded by another company for sale.

Second, PDD's AI-based models screened product listings to identify potential infringement at scale. It followed by flagging the issues to the platform's management team.

Third, it adopted "the most stringent enforcement policy" in the industry.⁹¹ The confirmed fake goods sellers would be subject to a penalty of 10 times of all the products sold in the same batch as compensation for consumers. Brand owners could also report suspected counterfeits on the company's IP Protection Platform.⁹² About 96% of the filed reports were processed within 24 hours.⁹³

"We are imposing stricter enforcements because fighting against counterfeits and IP infringement is a matter of life and death to our platform," said Andre Zhu, General Counsel at PDD. "Fake goods sellers currently are playing the game of catch-me-if-you-can with us. In the long run, we hope our C2M initiatives could help some of the manufacturers build their own brands."

PDD also sponsored the Lunar New Year Gala, broadcasted by China's state television in 2019, partly to build public credibility.⁹⁴ The five-hour-long show was the annual most-watched TV program in China, especially among people living in third-tier and below cities. In recent years, its sponsorship had become a battlefield for Chinese tech companies as a soft entry to reach those users. The show, often coined as China's Super Bowl¹ of TV, attracted over 1.17 billion viewers in 2019.⁹⁵ "People understand that not just anyone with a deep pocket is qualified to sponsor the Gala; they must also be credible companies," said David Liu.

Intensified Competition

As PDD rapidly emerged as a new power in China's e-commerce industry, it had put its rivals on alert. Some introduced similar product features as PDD, such as adding team purchase options to offer "value for money" products. JD and Alibaba both put such features in their apps in 2018. In the same year, Alibaba launched a new bargain-oriented app called "Taobao Tejia," meaning Taobao discounts, targeting those more price-sensitive consumers.⁹⁶ In July 2019, JD spun off its team purchase unit as a separate division with a goal of gaining a bigger market share against PDD. It also announced plans to cut commission fees to attract more third-party sellers and aimed to leverage its close links with Tencent. Starting in September 2019, WeChat users could shop directly through the app's shopping gateway for JD's team purchase products.⁹⁷

The rural area, which PDD prided itself on serving, also became a rising battleground. Alibaba in 2014 launched the Rural Taobao initiative, with a mission to "develop infrastructure and resources to encourage rural buyers and sellers to use the existing Taobao platform."⁹⁸ By June 2018, Rural Taobao had 28,000 "village stations" in local convenience stores as its logistical nodes and e-commerce portals.⁹⁹ In 2017, JD announced a plan to build 185 drone airports for rural area delivery.¹⁰⁰ As of June 2018, it had opened over 10,000 offline home appliances stores, covering about 25,000 Chinese counties and more than 600,000 villages.¹⁰¹

Some tactics went overboard to keep PDD at bay, said co-founder Dada. Alibaba, although never officially admitting it, imposed the industry's unspoken "forced exclusivity" or "one out of two" rule, which forced many merchants to sell and promote their products only on one platform.¹⁰² Brands that did not limit or terminate their business engagements on PDD's platform were not allowed to join the promotion programs on Alibaba's Tmall.¹⁰³ For example, Galanz, the world's biggest microwave oven

¹ Super Bowl: annual championship game of the U.S. National Football League. It was often the most watched TV broadcast of the year in the U.S., which hit a record of 114 million viewership in 2015 (<https://www.statista.com/statistics/216526/super-bowl-us-tv-viewership/>, accessed September 2019).

maker, said that Alibaba blocked search traffic to its products on Tmall because it partnered with PDD during China's annual shopping festival on June 18, 2019. Alibaba denied the accusation.¹⁰⁴ Dada further elaborated:

We have grown to the scale that will not allow us to hide our strength and bide our time. The heated competition is inevitable. A lot of it is unfair, which might not happen in markets outside China. As we grow bigger, we should stay very focused to serve our users, and think of innovative ways to work around it.

Expansion

The intensified competition at home had driven Chinese e-commerce players to seek new areas of growth. It was coupled with the world's largest e-commerce market showing signs of losing steam. Online retail sales rose at its slowest annual growth rate of 23.9% in 2018, compared to its record of 67.5% in 2012.¹⁰⁵ The cost of acquiring new users online also increased over the years: in 2015-2017, the cost per new user for JD jumped to 225 yuan from 134 yuan, while it increased to 310 yuan from 122 yuan for Alibaba.¹⁰⁶

They first sought opportunities offline. Alibaba's founder Ma coined a concept of "New Retail" in 2016. He argued that "the model of integrating online, offline, logistics and data across a single value chain" would replace pure e-commerce and be the future of retail in the next 10 to 20 years.¹⁰⁷ Alibaba launched its first offline store in 2016 and expanded to the fresh food market.¹⁰⁸ JD also opened fresh food supermarkets, called 7fresh, and planned to open 1 million offline convenience stores by 2023 as part of its "boundary-less retail" strategy.¹⁰⁹ PDD had no immediate plans to open offline stores.

Chinese e-commerce companies also eyed expansion abroad by selling made-in-China products overseas. In 2010, Alibaba set up AliExpress, a cross-border export e-commerce platform selling Chinese products, marking its first foray abroad.¹¹⁰

Alibaba and JD started establishing a presence in the nearby Southeast Asia. Alibaba invested in controlling two cross-border e-commerce platforms, Lazada and Daraz, during the 2016-2018 period, covering 11 Southeast Asian countries.¹¹¹ JD founded two local platforms in Indonesia¹¹² and Thailand,¹¹³ while it also invested in a Vietnamese e-commerce company called Tiki.¹¹⁴

As for cross-border logistics, as of 2018, Alibaba's Cainiao built six logistics hubs around the world, including Moscow, Hong Kong, and Dubai with a mission of achieving 72-hour global delivery.¹¹⁵ JD also leveraged its logistics networks by building fulfillment centers and warehouses abroad.

Huang expected PDD to become more global. "Social interactions and e-commerce should work globally. As China remains as the world's factory for a few more years, we will have the demand from the supply side. On the demand side, the pursuit of happiness and value-for-money products is universal," he said.

To PDD, however, simply exporting Chinese goods and setting foot in Southeast Asia were far from being global. Huang had received many proposals from abroad touting ideas of building African or Latin American versions of the PDD platform. Although the company had not deployed an international team, it certainly planned to attract global talents, as Huang believed a truly global platform should be more than just selling Chinese products abroad. As PDD explored its strategy of internationalization, it would start from selling European and American products to China, and further take Chinese brands and manufacturers overseas, possibly through the C2M model.¹¹⁶ In November

2018, PDD announced a “Global Express Plan,” with a goal of inviting 500,000 branded foreign merchants in three years to sell on its platform.¹¹⁷

PDD was also mulling over the entry solutions of the overseas market, which would be different from its strategies in China, factoring in user behavior and culture differences. “We know in the U.S., users actually do not really want other people or their friends to know what they are buying. They are not interested in having or wearing the same things, and that is very different from the user preference or behavior in China,” said David Liu, who was also uncertain whether the company could leverage Facebook or other social networks in the same way they did with WeChat.

The Road Ahead

The challenges of taking PDD’s businesses abroad included cross-border logistics, social networks, and mobile payment; these were the key established resources that the company leveraged upon to build its business in China. Could it replicate its success of the team purchase model elsewhere?

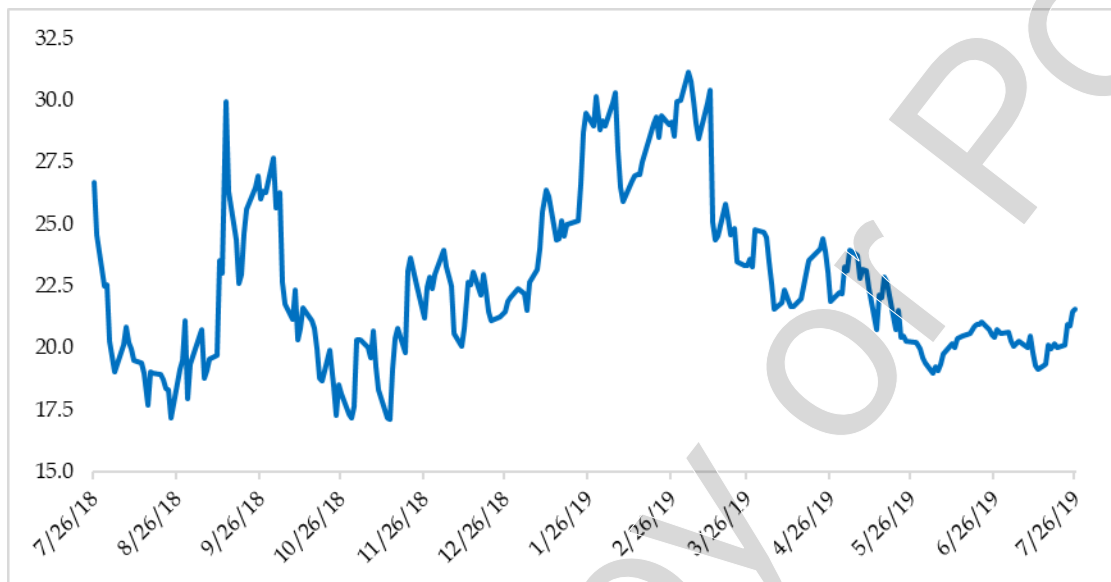
At home, behind PDD’s fast growth and popularity was the mounting expense of its marketing spending. The company’s sales and marketing expenses surged to 13.4 billion yuan in 2018 from 169 million yuan two years ago, as it “invested in cultivating greater user recognition through online and offline advertising campaigns and promotions.”¹¹⁸ As of the first quarter of 2019, the 4.89 billion yuan of the sales spending only brought about 3.16 billion yuan of revenue increase.¹¹⁹

Although PDD’s MAUs almost doubled each quarter in 2017, at the rate of 118.67%, 116.77% and 98.31% respectively, its quarterly growth decreased to less than 20% in 2018 and 6.27% in the first quarter of 2019, given the much larger base and seasonality. (See **Exhibit 11** on PDD’s MAU growth.) Its LTM monetization rate of 2.9% in the same period was already close to the level of Alibaba, leaving less room for growth. About 87% of PDD’s revenue came from the advertising fees paid by merchants, who bid for keywords or banner displays on the platforms, and 13% were from transaction services fees in connection with products sold on the platform.¹²⁰ The cost of acquiring each new user increased 7.2 times to 197 yuan in the first quarter of 2019 from the same period in 2018.¹²¹ Should it focus on powering up the existing monetization channels and trimming marketing expenses, so that the company could turn to profitability soon?

Compared to the 1.1 billion users of WeChat, 960 million users of e-wallet,¹²² and over 1 billion users of Alipay,¹²³ PDD’s 443 million accounted for about half of theirs. David Liu explained the company’s marketing strategy:

Every decision at PDD is centered on return on investment (ROI) and aimed for lifetime value, and the investment opportunities are still enormous either by acquiring traffic or engaging users. We can invest in our existing users by boosting their spending on the app. We can also spend on acquiring new users, which is always cheaper today than tomorrow. A user may not buy something tomorrow or next week, but it could be that six months down the road, one of his friends will send him a link and pull him back to the app to make a purchase. So the knock-on effect is very difficult to calculate. Not all investors understand this easily.

As Huang finished his long walk back to the office, he laid his eyes on the two Marvel superhero figures on his desk. Iron Man and Captain America were facing each other, as if positioned for battle. If they resembled the duopoly of Alibaba and JD in China’s e-commerce industry, where and how would Huang place the figure of the young and vibrant PDD? The serial entrepreneur smiled with confidence.

Exhibit 1 PDD Stock Price July 2018 (IPO) - July 2019 in USD

Source: Casewriters' adaptation, based on data from Bloomberg, accessed September 2019.

Exhibit 2a Pinduoduo Inc., 2017-2019 Quarterly Income Statement

For the Fiscal Quarter Ending (currencies in millions)	3 months Dec-31-2017 CNY	3 months Mar-31-2018 CNY	3 months Jun-30-2018 CNY	3 months Sep-30-2018 CNY	3 months Dec-31-2018 CNY	3 months Mar-31-2019 CNY
Revenues						
Online Marketplace Services	1,179.40	1,384.60	2,709.05	3,372.42	5,653.92	4,545.20
Total Revenues	1,179.40	1,384.60	2,709.05	3,372.42	5,653.92	4,545.20
Expenses						
Costs of Online Marketplace Services	-374.02	-318.70	-387.83	-774.68	-1,424.04	-873.31
Sales and Marketing Expenses	-753.95	-1,217.46	-2,970.73	-3,229.65	-6,023.97	-4,889.26
General and Administrative Expenses	-11.65	-28.76	-5,800.67	-305.57	-321.61	-236.08
Research and Development Expenses	-52.49	-72.82	-186.03	-332.00	-525.21	-667.08
Interest Income	38.89	50.16	136.60	164.82	233.36	252.10
Impairment of Long-term Investments	-10.00	-	-	-	-	-
Foreign Exchange Gain/(Loss)	-1.52	-2.14	3.60	5.42	3.16	-1.89
Other Income/(Loss), Net	-1.07	4.09	2.14	0.92	-19.50	-7.40
Earnings before Taxes	13.59	-201.02	-6,493.89	-1,098.32	-2,423.89	-1,877.71
Taxes and Other Expenses						
Net Income (Loss)	13.59	-201.02	-6,493.89	-1,098.32	-2,423.89	-1,877.71
Charges on Net Income						
Preferred Stock Adjustments	-	-80.50	-	-	-	-
Net Income Available to Common Shareholders	13.59	-281.52	-6,493.89	-1,098.32	-2,423.89	-1,877.71
Supplementary Info						
Gross Profit/loss	805.38	1,065.90	2,321.22	2,597.73	4,229.89	3,671.89
Operating Income (Loss)	-22.70	-253.13	-6,636.22	-1,269.48	-2,640.91	-2,120.52

Source: PDD Quarterly Earnings Reports, Capital IQ, Inc., a division of Standard & Poor's, accessed August 2019.

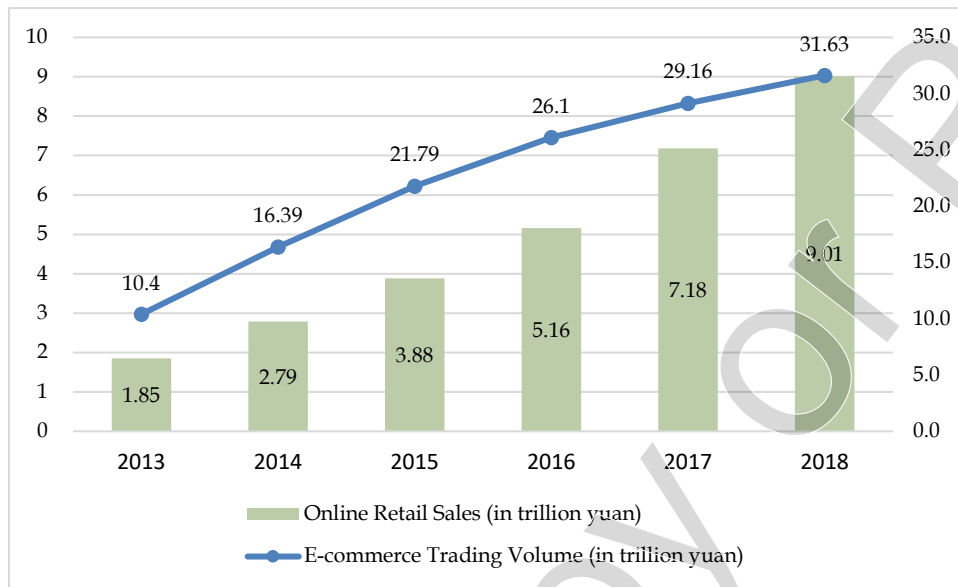
Note: 1 CNY=0.15 USD

Exhibit 2b Pinduoduo Inc., December 2016-March 2019 Historical Cash Flow

For the 12-month Period Ending (currencies in millions)	Dec-31-2016 CNY	Dec-31-2017 CNY	Dec-31-2018 CNY	Mar-31-2019 CNY
Cash flow from operations	879.8	9,686.3	7,767.9	6,908.2
Cash flow from investing activities	(307.3)	71.7	(7,548.5)	(6,289.5)
Cash flow from financing activities	486.5	1,398.9	17,344.4	19,513.6
Net cash flow	1,079.4	11,109.2	18,110.7	20,526.6

Source: PDD annual reports, Capital IQ, Inc., a division of Standard & Poor's, accessed August 2019.

Note: 1 CNY = 0.15 USD

Exhibit 3 China's Online Retail Sales & E-commerce Trading Volume 2013-2018 (in trillion yuan)

Source: Casewriters' adaptation, based on data from China's Ministry of Commerce, <http://images.mofcom.gov.cn/dzsws/201905/20190530100539785.pdf>, accessed September 2019.

Note: 1 CNY = 0.15 USD

Exhibit 4 Comparison of PDD with JD and Alibaba (LTM ended March 31, 2019)

	PDD	JD	Alibaba
GMV (RMB billion)	557.4	1,676.9 ^a	5,727
Active Buyers (million)	443.3	305.3 ^a	654
GMV per active buyer (RMB)	1,257.3	5,492.6 ^b	8,756.8 ^b
Monetization Rate ^c	2.9%	N/A	4% ^d
Market Cap (USD billion)	28.6	43.6	472.9
Active Merchants (million)	3.6 ^e	0.22	N/A
Net Income (RMB billion) ^f	(1.88)	7.3	25.83
Logistics	Third-party	Self-owned	Third-party

Source: Companies' filings, Capital IQ, Inc., a division of Standard & Poor's, accessed August 2019.

Note: LTM: in the last 12 months.

^a GMV and active buyers reported for the year ended December 31, 2018.

^b Casewriters' calculations.

^c Monetization rate is revenues expressed as a percentage of total GMV for LTM ended March 31, 2019.

^d Monetization rate estimated by China International Capital Corp. (CICC) for 2019,

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^e Active merchants reported for the year ended December 31, 2018.

^f Net income reported for the quarter ended March 31, 2019.

Exhibit 6 PDD Core Values

- **Benefit All:** PDD was designed to be a platform open and accessible to all. Not only was it designed to benefit a wide spectrum of consumers, it also benefited the producers. It endeavored to increase the income of farmers by direct sales of agricultural products to the cities at compelling value. It also worked with factories in China seeking incremental growth through its C2M initiative to design and offer “value for money” products to all. PDD’s user base spanned a broad segment of the Chinese population, with more than 50% from less-affluent third-tier and below cities.
- **People First:** PDD prioritized users over merchants and treated users as more than just traffic. Its product recommendation algorithm attempted to “aggregate similar needs through understanding the connections and need of its users.”¹²⁴ Therefore, the company could generate highly relevant product recommendations, aggregate user demand and push forward more customized production. PDD also aimed to create happy shopping experiences for its users by adding elements of sharing, gaming and entertainment.
- **More Open:** PDD sought to grow while maintaining an open platform to different merchants, payment processors, logistics operators and other ecosystem players. By leveraging existing infrastructure and the strengths of others where appropriate, PDD was able to focus more on investing in returning value to its users, such as improving suppliers’ production efficiency and product quality.

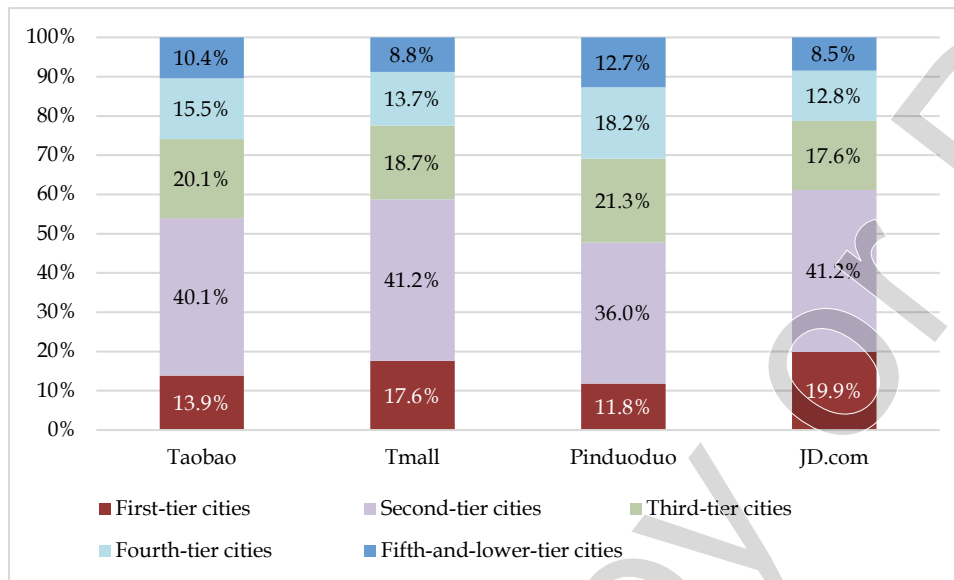
Source: Company documents.

Exhibit 7 Duo Duo Orchard and Bargain with Friends Games



Cut price by sharing with friends,
receive product for free

Source: Casewriters' experiment on the PDD app.

Exhibit 8 E-commerce Users by City Tiers in November 2018

Source: Casewriters' adaptation, based on data from Jiguang Big Data E-commerce Industry Report 2018, <https://www.jiguang.cn/reports/359>, accessed September 2019.

Exhibit 9 PDD's Agricultural Supply Chain: Chinese Coffee Bean Farmers

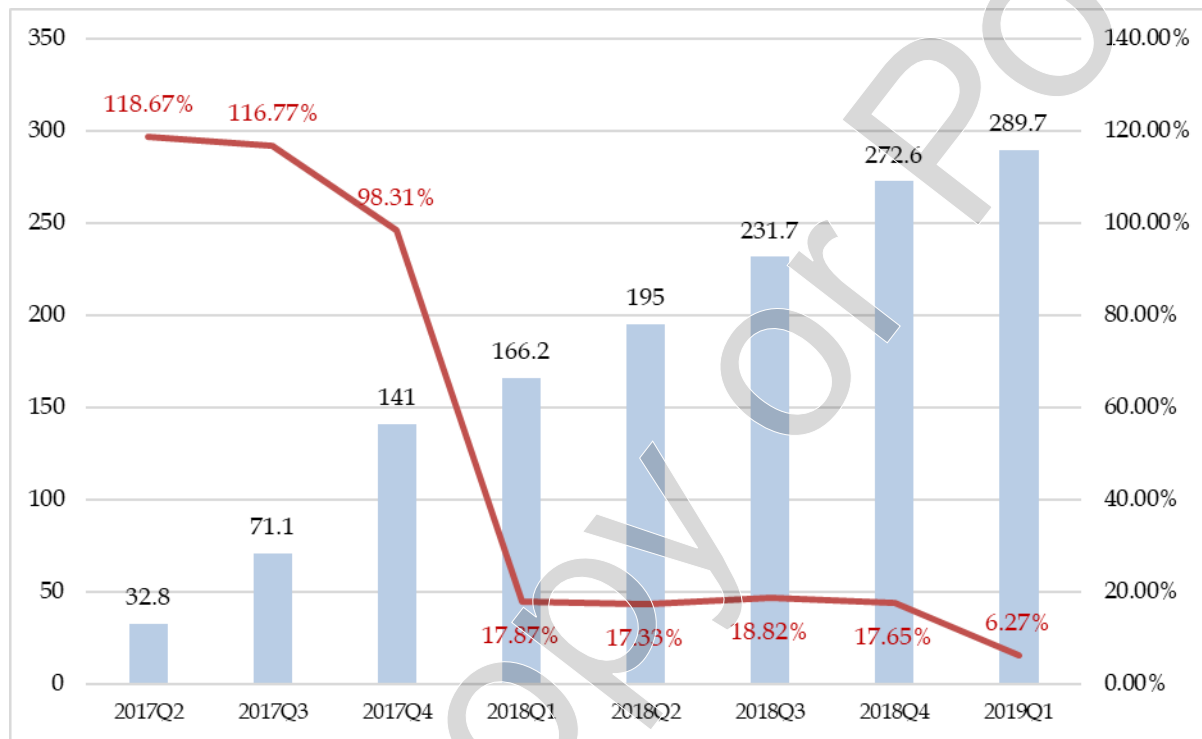
- A typical coffee bean distribution chain in China had at least five layers, beginning with the coffee farmers upstream, to the roasters and processors midstream to the various distributors downstream. The downstream distributors, including wholesalers, traders and retailers, accounted for most of the pricing mark-ups. For every \$10 worth of coffee retailed, the coffee farmers typically received only 10 cents, while distributors captured \$9.30.
- PDD worked with coffee bean farmers in the city of Baoshan of China's southwestern Yunnan province. PDD aimed to help them increase production and fetch better prices by optimizing all parts of the supply chain. PDD had provided demand and pricing visibility by connecting 792 farmers with six coffee merchants on its platform. As a result, these merchants purchased 42 tons of raw coffee beans from the farmers at a higher than the market price, removing the expensive layers of distributors.
- To effect sustainable change, PDD had partnered with agronomists to conduct research on the most suitable coffee varieties for Baoshan, and how to enhance yields through intercropping. PDD continued to identify and work with roasters seeking quality supplies.

Source: Company document.

Exhibit 10 PDD's New Brand Initiative: Deli Glass

- Under the traditional retail model, developing a new product often involved a lengthy process of market research, focus group testing, feedback through distribution channels and then large-scale production. Through PDD's C2M model, factories could design and produce based on a large volume of user preference data, compressing the new product development process by 50%. Therefore, new products could reach the market in a timelier fashion.
- Deli Glass, one of the largest glassware manufacturers in China and an OEM for household names like IKEA and Walmart, had realized the benefit of the C2M model. Deli opened its store on PDD in January 2019, with sales of their wine glasses reaching 150,000 units in the first month alone. Over time, Deli refined their product offering based on consumer feedback, e.g. making the glass stems thicker and shorter, so they could be placed in dishwashers. Deli was able to drive sales up to over 20,000 units a day during PDD's Lunar New Year sales period.

Source: Company document.

Exhibit 11 PDD's monthly active users and quarter-over-quarter growth (in millions, %)

Source: PDD quarterly earnings reports, casewriters' calculations.

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