China’s “Furious Five” Smartphones:
Huawei, Xiaomi, Oppo/Vivo and Lenovo - Strategies and Origins

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This document is authorized for use only by Juan Silva in INB 5822 2009 Winter 2 taught by RAMDAS CHANDRA, Nova Southeastern University from Mar 2019 to Jul 2019.
When IDC released China’s smartphone market statistics for the first and second quarters in 2017 (see Exhibit 1), the two dominant powers in the global market – Samsung and Apple – had lost their leading positions. Shrinking market shares in both quarters had left them with less than 12% combined. Out in front were a number of contenders, all domestic companies, including established brands such as Huawei, as well as several unfamiliar names. Even with the release of the flagship Samsung Galaxy Note 8 (August 23rd, 2017 in New York and September 13th, 2017 in China) and the iPhone 8 (September 12th, 2017), critics doubted they could take back market shares in China given the intense competition.

Who are these new smartphone companies? How do they compete with Samsung and Apple in China and global markets? How similar or different are their strategies? Where do their strategies come from?

A Brief History of Smartphones

Whether they are used as phones or to make a lifestyle or fashion statement, smartphones are now the inseparable companions of 44% of the global population.¹ With advanced operating systems (OS), smartphones can do voice calls and text messages, as well as function like personal computers, offering features such as personal digital assistant (PDA), internet access, multimedia player, digital camera, global positioning system (GPS), multiple sensors (e.g. motion, heart rate), mobile payments and running a host of software applications (apps).²

Released on August 16th, 1994, IBM’s Simon was considered the first smartphone in the world with its touchscreen and Zaurus OS.³ Others followed, including the OmniGo 700LX by Hewlett-Packard, the Nokia 9000 Communicator, and pdQ Smartphone by Qualcomm, each adding to the excitement and tech advances. Yet until the Ericsson R380e was released in 2000, none of them was marketed as a “smartphone”.⁴ Nokia and its Symbian OS, Blackberry by RIM (Research in Motion) and its BlackBerry OS, and Motorola and its Linux OS led the field – the Nokia 5300, Motorola Razr V3, and BlackBerry 8800 were classics for an entire generation (see Exhibit 2).

The iPhone debuted in 2007, the same year as the release of the source code of Android OS. Within three months of the iPhone’s official release (June 29th), sales had topped 1.12 million units in the US alone.⁵ With its revolutionary keyboard-less interface, fool-proof operating system (iOS) and stylish industrial design, the iPhone set the standard in the smartphone

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1 “44% of World Population will Own Smartphones in 2017”, by Linda Sui, Smartphones Blog, December 21st, 2016. [https://www.strategyanalytics.com/strategy-analytics/blogs/devices/smartphones/page/2#_WVtYpXqED0E](https://www.strategyanalytics.com/strategy-analytics/blogs/devices/smartphones/page/2#_WVtYpXqED0E)
industry and changed the market landscape forever, as the former leaders (Nokia, Motorola and BlackBerry) lost ground.

In 2008, the HTC Dream was the first smartphone to use the Android OS. Other companies released Android phones subsequently: Samsung and Motorola in October 2009, LG in May 2010, Sony Ericsson in August 2010, and Huawei in October 2010 – driving exponential growth of the global smartphone industry in the following years. In 2016, global smartphone shipments reached 1.47 billion units. With the withdrawal of Symbian OS by Nokia in 2011 and the decline of Windows OS (to an estimated 1.3% market share), the market polarised between iOS-based iPhones and Android-based smartphones.

As growth fell sharply (see Exhibit 3) and the market became saturated, smartphone makers pushed further into emerging markets such as China, India, Southeast Asia, Eastern Europe and African economies. Apple and Samsung had the upper hand, but there was no lack of competition (see Exhibit 4) – and Chinese companies were on the frontline (see Exhibit 5). With US$428.9 billion in revenues worldwide in 2016, the smartphone market attracted an increasing number of new entrants. Among the new brands, new models, and their more powerful hardware, which would emerge as the leaders of the pack?

**Overview of China’s Smartphone Market**

As the world’s largest developing economy, China has a huge market with 1.38 billion people, of which 61.69% are between the age of 15 and 54 and are potential consumers for smartphones. It has been the world’s largest smartphone market since 2012, accounting for around 33% of worldwide shipments. From 2012 to 2016, world smartphone shipments more than doubled (see Exhibit 6). By 2016, there were 563.1 million registered smartphone users in China or 41% of the population – 1.72 times more than in the US. It is estimated that by 2019 there will be 1.1 billion cell phone users in China, 63% of them smartphone users.

China has the biggest online community in the world and the largest ‘sharing economy’. WeChat wallet (37% share in China) and Alipay (54% market share) are the world’s largest mobile payment platforms since 2014, allowing purchases from retail shops and online stores, access to hospital and public services, payment of utility bills, transportation solutions and movie tickets. The ubiquity of applications made mobile internet access increasingly essential, and smartphones became the primary form of connection (see Exhibit 7), luring customers and companies alike into the market. However, with growth steadily eroding since 2012 (see

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7 “China Demographic Profile 2016”, Index Mundi, October 8th, 2016. [http://www.indexmundi.com/china/demographics_profile.html](http://www.indexmundi.com/china/demographics_profile.html)


Exhibit 8), the smartphone market in China saw negative growth in 2015 (see Exhibit 9) as the market matured – those who could afford a smartphone already owned one. The predicted switch from traditional feature phones to smartphones started to wane,\(^\text{11}\) posing new challenges for Chinese producers.

The increasingly saturated market in China has ramped up the competition among major players. iPhones began declining in the Chinese market.\(^\text{12}\) Following an exploding battery incident and the recall of the Samsung Note 7 in 2016, Samsung’s sales tanked. Even with the release of the powerful Galaxy S8 and Galaxy Note 8 in 2017, Samsung’s brand remained tarnished.

Local smartphone makers such as Huawei, OPPO, Vivo and Xiaomi seized the opportunity and surpassed Apple and Samsung in 2017 (see Exhibit 10). Newcomers such as OPPO and Vivo took the market by surprise with low-price, good-quality smartphones. Their success boosted confidence and propelled a variety of local suppliers towards outbound foreign direct investments as well as exports.\(^\text{13}\) They went on to launch higher priced models to satisfy consumers now looking for features as well as quality rather than rock-bottom prices.\(^\text{14}\)

Most local producers did not survive the battle and retreated from the market. Hisense, BIRD, and Coolpad were all strong contenders that went silent, albeit still in the game. AMOI Xiaxin, once obtaining a profit of nearly 1 billion RMB in 2000, sought to sell its business in 2016. BFB Cell Phone, which released the popular 100+ smartphone jointly with Baidu and iQiyi, went bankrupt in 2015. Dakele, once a shining star on JD.com’s peer-to-peer lending platform, shut down the entire smartphone business. K-Touch by Tianyu withdrew from the Chinese market and shifted operations to the African market in 2015. Others disappeared before they could make an impact (e.g., JIAYU, QCong, Iuni). Despite a recent surge of new entrants such as OnePlus, China’s smartphone industry was quickly moving towards consolidation.

**Major Players 2011-17**

Market shares of major smartphone brands from 2011-2017 are shown in Exhibits 11 to 14. In 2011, IDC predicted that China’s dominant players combined would ultimately outstrip the combined rest-of-the-world global brands in terms of sales (see Exhibit 11). Interestingly, this was achieved in shipments and market shares in both the Chinese and global markets (see Exhibits 12 & 13), but the predicted ‘winners’ deviated significantly from the forecasts. ZTE is no longer a leader in China since 2014. Lenovo lost its leadership in the Chinese market to Huawei and Xiaomi (two later entrants) before moving its focus to emerging economies such as India and Malaysia. OPPO and Vivo, two spinouts of BBK Electronics, showed unstoppable momentum as of 2015. In 2016, OPPO took the first place in terms of shipments, leaving Huawei in the second place, followed closely by Vivo.


Nowadays, Huawei, Lenovo, Xiaomi, OPPO and Vivo – China’s “Furious Five” Smartphones – are the leading contestants to Apple and Samsung globally (see Exhibit 14), each with its own distinctive strategy to compete in the industry in China and beyond.

**Huawei: Telecommunications Technology Giant**

Founded in 1987, Chinese technology giant Huawei is focused on providing ICT (information and communication technology) solutions, network service/products, and mobile devices to telecom carriers, enterprises and consumers. Starting out as a telecom equipment provider, Huawei devotes huge efforts to technology development, with R&D the foundation of its success (see Exhibit 15). As of 2016, Huawei was No. 1 in global telecoms equipment and No. 3 in smartphones. Serving more than 170 countries and regions, Huawei reaches over a third of the global population from its headquarters in Shenzhen. In 2016, revenues reached US$75 billion, and operating margins 9.1%. Its consumer business (mainly mobile devices) accounted for 34.5% of total revenues (up 43.6% on the previous year); 45.3% of revenues came from China and 30% from EMEA, while the Americas lagged with 8.5% of total revenues, growing a mere 13.3% annually. 15

Huawei entered the cell phone business in 2004, when its first 3G mobile phone debuted at the 3GSM conference in Cannes, France. Starting as an original equipment manufacturer (OEM) for large telecom carriers such as PCCW, Emobile, and Vodafone, Huawei focused on low-end phones, which failed to impress.

In 2011, Huawei initiated an integrated “cloud-pipe-device” strategy (cloud computing, information networks, smart devices) with smartphones as one of its pillars, seeking synergies between the three businesses. It also began to break into the medium- and high-end smartphone markets with a dual brand approach (Honor and Huawei).

In 2016, Huawei shipped a total of 139 million units of smartphones, a 29% increase over 2015. With 11.9% of the global market, it was the third largest smartphone company globally after Samsung and Apple. In the second half of 2017, Huawei released several new smartphones, including the Huawei Mate 10 (direct competitor to the Samsung Galaxy Note 8), Honor Note 9 (with the biggest-ever display for an Android-based smartphone), and Honor Magic 2 (its “smartest” and most beautiful smartphone). 16

Back in 2004, Huawei had introduced the U526 WCDMA cell phone at the Nokia Wireless Data Conference in Cannes, showing an interest of international expansion. In 2010, Huawei had released its first Android-based smartphone, IDEOS, at Internationale Funkausstellung Berlin. Huawei has since become one of the largest exporters among Chinese smartphone makers. With increasing competition and shrinking profit margins in China, Huawei accelerated its international expansion. The Huawei Mate 7 boosted Huawei to the leading position in the global market in 2014. 17 In 2015, the Huawei P7 had a record sales of more than 7.5 million

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units (in over 170 countries and regions), sales of the Huawei P8 exceeded 4 million units, and the Huawei Mate 7 had a record sales of 6.5 million units in the foreign market.

As of 2016, Huawei began to invest in manufacturing in India (around the same time as the release of its signature P9 smartphone) with the expectation that India would be its second largest market (after China).  

Despite repeated obstacles from the US government, Huawei worked hard to crack the US market. Recent obstruction from Congress terminated a proposed commercial relationship between AT&T and Huawei, which further delayed its attempt to enter the US smartphone market through carriers.

**Core Strategy: Focus on R&D and Design**

Huawei’s Consumer Business Group followed the development approach and inventive mentality of the founder, Ren Zhengfei. With the introduction of its “cloud-pipe-device” strategy in 2011, Huawei elevated the significance of its consumer device business. Yu Chengdong, Huawei veteran since 1993 with a profound understanding of the root and culture of Huawei’s technology focus, was appointed Chairman of Huawei Device and CEO of Huawei Consumer Business Group. To compete with Apple and Samsung, and fend off domestic challengers such as Xiaomi and Lenovo, Yu Chengdong and Ren Zhengfei decided to make R&D and smartphone architecture the basis of Huawei’s competitive advantage.

Believing that “R&D and design are key to a successful smartphone business”, Huawei devoted vast managerial effort and funding to its system-on-chip (SoC) and smartphone design. In 2016, research funding increased to 76.4 billion RMB, up from 59.6 billion RMB in 2015. With 15 research facilities worldwide and over 79,000 R&D personnel, Huawei outstripped many of its competitors in terms of human capital, funding and infrastructure.

Founded in October 2004 by Huawei, HiSilicon Technologies Co., Ltd. now owns multiple design centers located in Beijing, Shanghai, Silicon Valley, and Sweden for IC designs, and it is the driving force of Huawei smartphones’ hardware improvements. Kirin SoCs from HiSilicon allow Huawei to compete with traditional hardware providers such as Qualcomm, and power the entire family of Huawei smartphones. With the Kirin 935 (used on P8) created in April 2015, HiSilicon released three updates (Kirin 950, 955 and 960). By the end of 2016, the Kirin 960 boosted the performance of the flagship P10 and Mate 9 to the next level. On September 2nd 2017, Huawei announced the Kirin 970, the first deep-learning SoC at CES 2017 in Berlin. As a joint effort between Huawei and Cambricon – a Beijing-based artificial intelligence (AI) company, the Kirin 970 marks a new era for AI hardware, incorporating AI technology within a classic microchip to improve computational power. Huawei is one of the

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very few elite smartphone vendors (including Samsung and Apple) with the ability to develop its own SoCs.

While also placing a heavy emphasis on the industrial design of its smartphones, Huawei lacks experience on the “artistic” side of the business and has been looking to recruit the best of the best from the global design talent market. In 2010, Hagen Fendler,22 former Director of Product Concept Design of Siemens and former Chief Designer of BMW, was recruited to lead an international development team consisting of over 200 engineers globally. In 2012, Huawei hired Joonsuh Kim23, a former design master at LG, Philip, and Nokia, to fill the Chief Designer (later Chief Design Officer) position. Under his supervision, Huawei’s Mate 9 Porsche Design edition won an industrial design award in 2016. Huawei did not stop its talent hunting spree: Abigail Sarah Brody, former Deputy Director of Global Design of eBay and former Creative Director of Apple, joined Huawei in 2015 as VP of Huawei Device and Chief User Experience Designer of Huawei Consumer Group.24 Huawei’s concentration on technology and design strengthened its No. 3 position in the global smartphone market, only slightly behind Apple in market share.

**Huawei’s Strategist: An Engineer’s Dedication**

Huawei’s strategic focus on R&D and operations (rather than flamboyant marketing) can be attributed to Ren Zhengfei’s background and his early experiences with the company. Born to a family of educators in Guizhou, Ren grew up with a strong sense of responsibility and respect for knowledge. Graduating from Chongqing Civil Engineering College (now part of Chongqing University since 2000), he was an infrastructure engineering soldier of the People’s Liberation Army of China.25 Observing a trend for electronic devices, he taught himself automated control and electronic computing during his last year in college. During his military service, he started to show his talent on electronic devices and won multiple innovation awards.26

In 1987, Ren founded Huawei in Shenzhen, starting as a sales agent for a Hong Kong-based SPC exchange devices company (stored program control exchange devices, a key component of the telephone network). Despite his initial success as a sales agent, Ren’s inherent passion for technology drove him into the IT industry, in addition to managing day-to-day business operations. In 1992, he spent every last penny on the development of Huawei’s first SPC exchange device, the C&C08, combining low price and good quality, breaking into the SPC market once monopolized by Western multinationals like Cisco, and then taking over the low-price market segment. Ren attributed Huawei’s success to the company’s consistent focus on technology and a culture of innovation, as emphasized in multiple letters to employees.27, 28

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22 Hagen Fendler. [https://www.linkedin.com/in/hagen-fendler-4a17806/?ppe=1](https://www.linkedin.com/in/hagen-fendler-4a17806/?ppe=1)
23 Joonsuh Kim. [https://www.linkedin.com/in/joonsuh-kim-b387765/?ppe=1](https://www.linkedin.com/in/joonsuh-kim-b387765/?ppe=1)
28 “The spring of the northern country”, by Zhengfei Ren, 2001. [http://gb.cri.cn/1827/2004/10/19/405@333152.htm](http://gb.cri.cn/1827/2004/10/19/405@333152.htm)
Unable to personally supervise all R&D activities, Ren established a management system to impose his vision of Huawei’s development through technology, starting with the famous seven core values of Huawei, covering technology adoption, respect for knowledge, responsibility of researchers, and a corporate culture emphasizing research. He established the CEO rotation system, seeking to retain knowledge inflows from different perspectives. Finally, he created an employee incentive system that leaned heavily towards R&D – to continue their work in the company, employees needed to keep learning new knowledge, skills, and technologies.

Xiaomi: A Technology Start-up

Founded in April 2010, Xiaomi Technology Co. Ltd chose Beijing as its headquarters. Founding CEO Lei Jun was a serial entrepreneur and seasoned investor with experience in internet-based companies such as Kingsoft (WPS Office developer), Vancl (online fast-moving consumer goods retailer), Duowan (gaming website), Shangpin.com (luxury online shop), and Cheetech Mobile Inc. (mobile app developer). The Mi logo, an acronym for Mobile Internet (and Mission Impossible), made clear the focus on mobile devices and mobile network from the outset. Initially conceived as “just for fans,” Xiaomi focused on providing hard-core fans and tech enthusiasts with mobile handsets and intelligent electronic products/services (including PCs, VR devices, routers, air purifiers, wristbands, televisions, drones, robots, and full smart home frameworks).

Unlike Huawei, Lenovo, and OPPO and Vivo, which began in the lower-end segment, Xiaomi started at the medium-end of the smartphone market with compelling hardware and affordable prices. It released MIUI, a mobile OS based on Android on August 16th, 2010, followed by the official smartphone Mi 1 on the same date a year later. By 2013, Xiaomi smartphones’ global consumer base had reached 10 million with the newly released Mi 2.

That year, Xiaomi hired Hugo Barra, former Google VP and Android Products VP, and officially launched its global business strategy. The Redmi series (about US$120) was released simultaneously with the Mi series in an attempt to improve its presence in the lower-end market. With both series, Xiaomi reached No. 1 in China in smartphone shipments in the second quarter of 2014 (according to a report by Canalys). In 2015, Xiaomi became the No. 5 smartphone vendor globally (according to IDC), behind Lenovo and Huawei (see Exhibit 16).

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http://gb.cri.cn/1827/2004/10/19/405@333152.htm
http://www.sohu.com/a/69803286_307378
33 “MIUI reached 10 million consumer bases. Xiaomi will establish the online community based on cloud services”, tech.qq.com, January 9th, 2013. 
http://tech.qq.com/a/20130109/000139.htm
34 Hugo Barra. https://www.linkedin.com/in/hbarra
35 “Xiaomi ranked No.1 in China’s smartphone market in the second quarter”, tech.sina.com, August 4th, 2014. 
However, growth stalled in 2016 as competitors duplicated its online business model, and as a result of a long-lasting patent dispute and Xiaomi’s decision to expand to offline channels.36

Xiaomi started a series of international expansions over the last few years. As early as 2014, Xiaomi entered India, where it sold half a million units in less than four months and was hailed as China’s version of the iPhone, attracting investment from the Tata Group in 2015.37

Announcing a US$1 billion loan contract with 18 banks in China in 2017, Xiaomi intended to expand its service globally and improve its offline distribution channels in foreign markets.38 In early 2017, Xiaomi expanded its reach in Russia through its local business partner, RDC Group, and established six retail stores in Mosco, Petersburg, and Vladivostók.39

In March 2017, Xiaomi announced a collaboration with Digiworld Corporation, a Vietnamese telecommunication company with 20 years of operational experience in Southeast Asia, to enter Vietnam’s smartphone market with its Redmi series.40

On May 9th, 2017, Xiaomi released Redmi 4 and Redmi Note 4 in Mexico and established the signature online Mi community for Latin America. Following the official launch in Mexico, Xiaomi developed a distribution network in South America including Bolivia, Chile, Columbia, Brazil and Argentina.41 Seeking to enter the US market, Xiaomi made its debut at the Consumer Electronics Show in Las Vegas in 2017.42

Xiaomi started manufacturing in Indonesia, as the partner of PT Erajaya Swasembada Tbk, PT Sat Nusapersada Tbk, and TSM Technologies,43 a bold move signalling its commitment to Southeast Asia. In the same year, Xiaomi agreed on a deal with Nokia over patents (1500 patents) and equipment, hoping to solve existing and potential patent-related disputes once and for all.44 Eyeing long and steady growth in the global market, Lei Jun was confident about the future of Xiaomi despite challenges in the Chinese home market.

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40 Ibid.
41 Ibid.
42 “Xiaomi may be expanding into more global markets; here’s why that’s important”, by John Callaham, AndroidAuthority.com, December 9th, 2016. http://www.androidauthority.com/xiaomi-may-expand-global-markets-735221
Core Strategy: Fan-based Marketing and Online Sales Channel

Instead of developing a core technology such as SoC (like Huawei), Xiaomi relies on unique design, simple assembly and component supplies from hardware providers, including Qualcomm, Sharp, LG, Samsung, TDK, NVIDIA and Sony.\(^{45}\) Besides a development center in Beijing and several international operation branches (for distribution, storage, marketing, and sales), Xiaomi does not own any factories, instead relying on OEMs such as Foxconn for manufacturing. Its strategy has been focused on internet-based sales channels and the fans community.

Corresponding to its “just for fans” culture, Xiaomi pioneered several revolutionary marketing approaches never before imagined by a smartphone vendor. It established the Xiaomi online community before the release of its first smartphone to interact with potential customers in the pre-sale phase. It invited hard-core “tech geeks” to participate in the development of the MIUI right after its release in 2010.\(^ {46}\) Xiaomi also involved fans in software and hardware development, boasting that a large number of employees were initially Mi fans who had been active on its global website. It gave awards to fans with highest scores in Xiaomi’s online games and invited them to major events such as product release ceremonies,\(^ {47}\) thereby propagating its products without massive investment in multimedia advertising. Management team members also interacted with fans offline to hear their criticisms, comments and advice. Its interactive business model was compared to that of an NGO or a religious organization.\(^ {48}\)

Xiaomi’s online distribution channel allowed it to minimize investment in stores, warehouses, transportation systems and other intermediaries. Relying on its website and online retailing platforms such as Vancl and Tmall, Xiaomi smartphones sold rapidly, the only drawback being the mismatch between supply and demand. Xiaomi’s so-called “hunger marketing” tactics – deliberately creating a shortage to stimulate consumption – was, in fact, not initially intended. Notwithstanding the success of its online strategy, Xiaomi expanded its operation to offline retail as it globalized. It announced plans for an R&D center in Bengaluru, India, following a successful offline experience, underlining its ambition to provide both outstanding service and products at the same time.

As a leading player in China, India and other emerging economies, Xiaomi created a competitive advantage through the fan-based community and online channels. Could it compete with other vendors in more developed markets utilizing the same strategy?

Xiaomi’s Strategist: A Geek’s Insight

Xiaomi’s corporate culture and fan-based strategy were inseparable from the founder/CEO Lei Jun. Having completed his college education in computer science at Wuhan University in just

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two years, in his spare time he began to pursue his entrepreneurship dreams. With Wang Quanguo, his best friend and business partner today, Lei Jun founded the Yellow Rose Group to develop encryption software. They also experimented developing security software, financial software, CAD (computer-aided design) software, applicable gadgets, and even hardware such as PCBs (printed circuit boards).

Inspired by Steve Jobs and Silicon Valley entrepreneurs, Lei Jun and his partners turned Yellow Rose into a start-up, Three-Color Co. (TCC), through which he gained valuable knowledge and experience, as well as a profound understanding of the importance of customer feedback for software development. TCC also gave Lei Jun the opportunity to work with Kingsoft, one of the biggest software and IT firms in the early 1990s. In his 16 years at Kingsoft, Lei Jun was the CEO of the company (and is now the chairman of the board), developing a deep understanding of the application and foundation of software. In response to consumer feedback, Kingsoft released the popular WPS office, security software, and other internet-based applications such as cloud storage over the years.

In interacting with fans in the MIUI’s community on several occasions, Lei Jun brought up two phenomenally successful companies in China: Tongrentang (a 340-year old pharmacy) and Haidilao (China’s trendiest hot-pot chain); he attributed their success to their dedication to building relationships with customers.

After stepping down from Kingsoft management, he became an angel investor in businesses centered on consumer experience and consumer products (e.g., Vancl, an online community and retailing shop for young consumers). His in-depth understanding of consumers’ needs was demonstrated in the founding of Xiaomi, as he explained in an interview: “I thought to myself, if I make a phone, you can tell me anything you wish for it or what’s wrong. If it is justifiable, we will work on it immediately. I’ll give you a weekly update, and you may even see your wishes come true within a week.”

Xiaomi’s business model was the open-source community constituted by fans and external developers and the “killer apps” developed by this community. In addition to the focus on consumers, Lei Jun incorporated his investment experience about online retailing (e.g., Letao, online shoes retailing platform; Zhuoyue, online retailing platform, acquired by Amazon in 2004; etc.) into Xiaomi’s smartphone distribution.

**Lenovo: A PC Legend**

Headquartered in Beijing, China’s PC giant Lenovo provides enterprises and consumers with products and services including information/communication solutions, data analytics/cloud computing, personal computers, and mobile handsets. Ranked No. 2 in global personal computing devices (surpassed by HP in 2016), Lenovo featured in the medium segment of the

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51 Ibid.

Fortune Global 500 as of the mid-2000s. Founded in 1984 by 11 scientists, including leader Liu Chuanzhi, with financial support from the Institute of Computing Technology of the Chinese Academy of Sciences, Lenovo supplies affordable PCs in over 200 countries and regions. In 2017, Lenovo’s revenues totaled US$43 billion, with gross profit margin of 14.2%. Sales in China accounted for 28% and international sales 72% of total revenues. PCs were the core business, accounting for 70% of revenue and smartphones for 18%, a declining trend since 2016 (see Exhibit 17).

Lenovo sought to expand its smartphone position as its PC business contracted after 2008. As early as 2002, it had provided low-end feature cell phones to Chinese telecom carriers and expanded its market share in the low-end segment of China’s smartphone market with a broad variety of products. During this period, Lenovo formed close relationships with large Chinese telecom carriers such as China Mobile, China Telecom, and China Unicom. Its reliance on traditional distribution channels constituted by telecom carriers’ offline retail stores (the primary means for consumers to buy mobile devices in the 2000s) boosted its presence. In the third quarter of 2012, Lenovo captured 15% of the market in China, up from only 1.7% a year earlier.

In both Chinese and Asian markets, Lenovo pushed A series, K series, S series and P series to fill every niche in the low-to-medium-end market between 2011 and 2014. Its “Gold Warrior” brand and Lemon brand added to its original series to target the low-price segment between RMB 500-1500 (US$ 80-240) since 2012. By 2013, Lenovo had the most extensive product portfolio in the low-end market. It entered the high-end market with a new brand, Vibe, in September 2013. Vibe X focused on design and Vibe Z pushed performance. Despite its limited sales record in the Chinese market, Vibe X impressed foreign markets such as India.

In the fourth quarter of 2013, Lenovo had 13.2% share of the market in China, second only to Samsung, yet fell short of Lenovo’s ambitions. Lenovo relentlessly pursued bigger profit margins in the medium-to-high-end market through Vibe and ZUK (the online version of Vibe) in China and developed Asian markets. Due to its inability to enter markets in Europe and America through telecom carriers, Lenovo had to acquire established brands. From January 30th, 2014, with a series of acquisitions focused on Motorola Mobility’s operation department (excluding intellectual property) from Google, Lenovo broke into the medium- and high-end markets worldwide. In December 2015, Lenovo re-introduced the once glorified Motorola in the Chinese market with Moto X, priced at CNY 5288 (US$813), comparable to the iPhone 6S. The Moto G and Moto E were subsequently introduced in Asian markets.

The PC legend did not turn itself into a smartphone legend, however. The breadth of its brands and products portfolio was narrowed after the shutdown of several failing product lines such as ZUK, Gold Warrior and Vibe in 2015 and 2016. In 2016, Lenovo was not even among the top five smartphone vendors in China, where Huawei, OPPO, Vivo, Xiaomi, and Apple accounted

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54 Ibid.
for about 60% of the market. Its Hong Kong-listed stock fell nearly 60% after the Motorola acquisition. In 2017, it trimmed its smartphone business to two brands including Lemon (still targeting the low-end market) and Lenovo Moto (formerly Motorola).

Core Strategy: Classic Mergers & Acquisitions

Lenovo’s acquisition of IBM’s PC division and its successful integration paved its way to global leadership in the PC business. Lenovo practiced similar strategies in the smartphone business.

After the 2008 financial crisis, Yang Yuanqing, CEO since 2001, proposed a Protect & Attack strategy aiming to pull Lenovo back from the brink and push towards global development. This strategy focused on protecting the mature market (China) as well as the cash cow business (PCs), while extending its geographic reach (e.g., South Asia) and new products (e.g., smartphones). Entering the low-profit margin and low-end segment of the smartphone market in China, Lenovo duplicated its cost-cutting/sales-ramping strategy from the PC business. It maintained international expansion momentum until November 2012, with Asia Pacific and Latin American countries in the first batch of exports.

In developing its smartphone business, Lenovo resorted to the old tricks that had brought the PC brand its global status. Now it was contemplating acquisitions to boost the product line, promote production and tap into global markets. In 2013, rumours linked Lenovo with Taiwanese smartphone leader HTC, with the possibility of a joint venture discussed. That same year, Lenovo approached BlackBerry with the intention of acquisition. Abandoning the purchase due to potential security scrutiny from the US government, it then eyed a deal with Google over Motorola Mobility.

Motorola was considered the perfect target for several reasons. Like Lenovo, it relied heavily on telecom carriers as smartphone distributors in the global market. As a former dominant player, it had a loyal consumer base in China, as well as a mature production line which could be deployed by Lenovo without much technology transformation or innovation. Lenovo acquired Motorola Mobility for US$2.9 billion in January 2014. Yang saw it as a potential shortcut to the established North American and South American markets, and a way to boost profit margins, with its focus on the medium- and high-end smartphone market. Despite much concern from shareholders, Lenovo had faith in its integration capabilities to get Motorola back into profit in four to six quarters.

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56 Top 3 China Smartphone Vendors Maintains Streak with Combined 47% Total Market Share in 2016Q2, by IDC. [https://www.idc.com/getdoc.jsp?containerId=prCHE41676816]
This simple duplication of the previous successful experience of acquisition without adjustment based on markets and a new environment, however, hurt the performance of Lenovo’s smartphone business. Lenovo did not have enough time to integrate Motorola appropriately after the acquisition from Google. It imported Moto X without redesign and neglected the marketing side due to blind confidence in the Motorola brand. The cultural incompatibility and different market perspectives led to a series of problems between the two.62

Lenovo’s Strategist: A Businessman’s Practice

Lenovo’s success in the PC market and struggle in the smartphone market are often traced to CEO Yang Yuanqing, but this view ignores the company’s strategy development trajectory. Liu Chuanzhi, founder of Lenovo (‘Legend’ at the time), has had and continues to have a profound influence on Yang Yuanqing and Lenovo’s current strategy. Fighting for survival at the beginning of China’s marketization reform in the late 1980s, Liu had to embrace any opportunity that could generate profits, and the company was founded primarily as a distributor of imported machines and products. Later on, he expanded into manufacturing and service and the company became an OEM as the import business declined. The company’s formative experience may have limited the strategist’s vision on the path to success. Yang Yuanqing, his protégé, applied a similar approach to the company’s subsequent development.

Yang Yuanqing, former director of Lenovo’s PC department, took over in 2001 as CEO of Lenovo when Liu Chuanzhi, founding CEO, split the company into Legend (now Lenovo) and Shenzhou Digital. As a successful salesman, Yang managed to push Lenovo’s PC sales to the No. 5 position in Asia and No. 1 in China, within six years after Lenovo’s listing on the Hong Kong Stock Exchange and creation of the small personal computer (PC) department in 1994.63

As a sales agent for big PC firms such as HP in its early years, Lenovo owned the distribution network but not the technology. Relying on parts and components from suppliers, Lenovo produced its PCs through assembly. As an OEM, Lenovo took over the market through price competition, and Yang’s focus shifted towards business operations instead of research and innovation. Subsequent operations directly reflected this emphasis.

In 2004, in keeping with its global expansion efforts and to strengthen its reputation and technology, Lenovo acquired the global IT giant IBM’s PC business.64 Despite the six long years of integration and reconfiguration due to cultural, structural, and other differences, Lenovo finally made the acquisition work, pushing it to the No. 1 position in the global PC market in 2013. To ease the integration process, Yang personally moved to Raleigh, North Carolina to learn the western management style and culture.

Apparently, Lenovo’s experience with the acquisition of IBM’s PC division gave the company some confidence in growing and developing its smartphone business. Yang adopted the same strategy for the smartphone business, but soon realized the difference: the smartphone business did not have the same ‘profit buffer’ as the PC business, which was key to Lenovo’s acquisition

and cost-cutting strategy. Given many criticisms of the Motorola deal, Yang needed to prove that his strategy could work in order to maintain his position as head of Lenovo.

**OPPO and Vivo: Newcomers from a Familiar Brand**

In September 1995, Duan Yongping founded BBK Electronics with six team members (three production specialists and three development experts) from his former employer Xiaobawang (a producer of electronic products) in Dongguan, Guangdong. Among the six team members, Shen Wei (founder of Vivo) and Chen Mingyong (founder of OPPO) were part of BBK’s “cabinet.” In 1999, Duan Yongping founded three separate companies to handle the learning assistance device, video/audio device, and telecommunication device businesses independently, and appointed Shen as the leader of the telecommunication device group, and Chen as the head of the video/audio device group. Despite its prior experience in telecommunication devices, BBK Electronics did not dabble in the smartphone business until the early 2010s. Indeed, during the later development of OPPO and Vivo, BBK took a supporting role as the parent firm and an investor.

In 2001, Chen Mingyong started to register the OPPO brand and eventually founded OPPO (China) in addition to OPPO Digital Ltd. in Silicon Valley. In 2005, OPPO released the first MPEG audio player 3 (MP3) X9 developed in China and then entered the video/audio player market (MP3 & MP4). With the A103 “smile face” cell phone, OPPO broke into the mobile phone industry. In the same year, OPPO combined MP4 with mobile phones and created the Real series music cell phone before shipping the signature OPPO Ulike series to overseas markets. In 2011, OPPO released its first smartphone, the X903, and officially entered the industry. Since then, it has focused on their video and photographic capabilities, competing with its Android OS-based “photographic” smartphones. Released on June 9th, 2017, its flagship smartphone R11 was equipped with dual cameras and vast photographic capabilities (20 million pixels).

Vivo started in 2009 and moved into the smartphone market in 2011 with the V1 music smartphone. In 2013, Vivo pushed music smartphones into a new era with the Xplay series (mounted with Hi-Fi 1.0 sound framework). Vivo released Android-based Funtouch OS in 2013, the same year that OPPO adopted ColorOS. Vivo kept honing its capability on music smartphones and brought X9s, the newest version from the Xplay series, to the market in summer 2017.

Smartphones released by Vivo and OPPO, however, did not contain any self-developed core technology components such as SoC. They minimized costs on parts other than cameras and audio players.

The two BBK subsidiaries stormed the market in 2015, challenging Huawei smartphones. Based on IDC statistics of smartphone shipments in the first half 2007, Vivo ranked No. 5 globally, and OPPO secured the No. 4 spot. The two brands appealed to members of the fast-growing younger working class with low-to-medium incomes. The photographic capability of OPPO and the music/video functions provided by Vivo satisfied their desire to express themselves on social media and post lifestyle information. The signature fast-recharging technology “recharge for 5 minutes, call for two hours” met young users’ need to stay connected anyplace/anytime, and the affordable price won attention from a younger crowd with limited financial means.
Like their competitors, the pace of expansion for Vivo and OPPO picked up in the past two years. Vivo launched its official global website www.vivo.com in early 2017. It built two development centers focused on photography and hi-fi sound systems in San Diego and Silicon Valley. Vivo’s ambitions were clear with its bold action in the North America market, in addition to operations in India. OPPO maintained a similar pace to Huawei, Xiaomi and Lenovo, and started to globalize in countries closer to China. Despite competition from Huawei, Lenovo, and Xiaomi, OPPO and Vivo emerged among the top five vendors in India, with no-frills marketing (see Exhibit 19). With a US$216 million land purchase (about 404 acres) in India, OPPO established a factory in 2016, aiming to use India as a springboard to enter the Middle East, North Africa and Southeast Asia.

Facing restrictions from patents and already mired in patent litigation in India, OPPO and Vivo tried to expand their patent stock through alliances to reduce the challenges of globalization. In 2016, both announced collaboration with Qualcomm. Despite the challenge of limited core technology and patents, as well as low recognition in global markets, they had no choice but to expand globally if they were to increase market shares.

### Core Strategy: Multimedia Marketing & Offline Distribution Channel in Rural Areas

BBK’s founder Duan Yongping set an excellent example for his followers Chen Mingyong and Shen Wei on how to run a successful electronics company – with a direct impact on the competitive strategy of OPPO and Vivo. When working for Xiaobawang, Duan had developed strong relationships with distributors and dealers through close and trustworthy collaborations. In turn, these distributors and dealers trusted Duan’s business instinct when he left Xiaobawang, and they followed him to do business with BBK. Some of these distributors even joined the management team of BBK and later became shareholders or board members.

Looking at OPPO and Vivo today, it is easy to see the marketing strategy and distribution networks inherited from BBK. Imitating Xiaomi’s strategy, OPPO and Vivo also expanded their marketing online (their ads are found on mobile apps such as Tencent News and WeChat). Since 2011, Vivo has sponsored television program mes with the highest audience ratings (including “The Voice of China”, “Running Man”, “If You Are the Man”, “Where Are We Going, Dad?”). In 2015, Vivo was involved in the first batch of WeChat online commercials.

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66 “vivo will establish seven research centers to facilitate globalization”, Wenzhou Li, tech.ifeng.com, January 19th, 2017. [http://tech.ifeng.com/a/20170119/44534025_0.shtml](http://tech.ifeng.com/a/20170119/44534025_0.shtml)
68 “Another important strategic move from OPPO: will ship smartphones from India to Middle East, North Africa, and Southeast Asia”, siliconeoil.cn, May 9th, 2017. [http://twnews.siliconeoil.cn/v/2674599](http://twnews.siliconeoil.cn/v/2674599)
69 “vivo announced collaboration with Qualcomm, immediately after OPPO”, Tencent Digital, August 8th, 2016. [http://digi.tech.qq.com/a/20160808/013912.htm](http://digi.tech.qq.com/a/20160808/013912.htm)
70 “First Batch of WeChat Commercial is online: BMW, Coca Cola, and VIVO are on the list”, tech.ifeng.com, January 26th, 2015. [http://tech.ifeng.com/a/20150126/40957887_0.shtml](http://tech.ifeng.com/a/20150126/40957887_0.shtml)
Given the music and photographic focus of OPPO and Vivo, potential consumers are younger generations who enjoy life, are “self-absorbing” and admirers of celebrities. OPPO and Vivo thus invited top celebrities to represent their products and brands accordingly. For example, OPPO’s new flagship R11 is represented by Jay Chou and TF Boys, the most famous musicians/bands in China. Previous celebrity endorsements came from Song Joong Ki (Korean actor), Yifeng Li (Chinese actor), Eddie Peng (Canadian actor), Neymar (Brazilian soccer star), Leonardo DiCaprio (Hollywood star), and Stephen Curry (NBA star). These public figures quickly tied the two brands with fashion and passion, attractive characteristics to a younger crowd (see Exhibit 18).

In addition, both companies actively participated in major sports events. Vivo sponsored the Sudirman Cup (badminton world tournament) in 2015, and treated it as a critical step toward the brand’s globalization. In the 2016-2017 seasons, Vivo was strategic partner for the NBA (National Basketball Association) in China. In March 2017, OPPO was named as the new sponsor of the Indian national cricket team, after winning the Indian team sponsorship rights for a five-year period starting April 2017. OPPO sponsored the Supercopa Sudamericana’s (South American Super cup for soccer) game between Brazil and Argentina in China, July 2017. The two siblings would expand their influence through any marketing channel with the most popular celebrities and endless gossip.

In offline distribution, they relied on BBK’s established distribution and sales channels, with a focus on the smaller and less developed cities and towns in China. Sales derived from the huge number of physical stores (almost 320,000) and their vast human capital (150,000 direct employees and even more indirect sales associates). A smaller percentage of sales came from first-tier cities including Beijing, Shanghai, Shenzhen, and Guangzhou, or second-tier cities such as Chongqing, Nanjing, Xiamen, and Xi’an. It seemed that in China, OPPO and Vivo benefited from the slower pace of development in smaller cities and towns, and these locations’ limited exposure to the outside world. So far, traditional marketing and sales channels have worked well for OPPO and Vivo in China. Only time will tell whether a similar strategy in the global market can succeed.

**OPPO and Vivo’s Strategist: A Salesman’s Wisdom**

Duan first worked his marketing magic at Xiaobawang. In 1991, Xiaobawang spent RMB 400,000 putting its ad on CCTV (China’s Central Television) and became a household name overnight. In 1993, a series of ads with well-known children’s rhymes were shown on prime-time CCTV. Later, with the international superstar Jackie Chan’s help, Xiaobawang’s second generation learning device drew national attention. Within three years, Duan turned the indebted company into one with assets over 1 billion RMB. At BBK, Duan utilized the same marketing strategy and released various commercials on TV, radio and magazines (e.g., paying RMB 280 million to obtain the next two consecutive years’ priority rights over ads on CCTV.

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http://www.360doc.com/content/17/0527/00/41836862_657641328.shtml

72 “How can OPPO and VIVO succeed with traditional marketing?”, by Xiaobo Wu, ebrun.com, November 3rd, 2016.
http://www.ebrun.com/20161103/199797.shtml

73 “From the top to bottom, Xiaobawang’s products”, digi.163.com, November 27th, 2012.
http://digi.163.com/photoview/030U0016/195664.html#p=8HACMAUN030U0016
In addition to the focus on multimedia marketing, Duan was effective in developing distribution channels. At Xiaobawang, he created a network of representative agents in each province and relied on this direct sales channel for all of Xiaobawang’s products – a tradition continued during BBK’s initial years. Thanks to his former connection with agents from the Xiaobawang era, BBK inherited the benefit of low-cost, trustworthy offline physical stores. Duan awarded shares to these suppliers, further strengthening the connection.\(^\text{74}\)

As Duan’s protégés, Shen Wei and Chen Mingyong implemented similar strategies, utilizing the inherited distribution networks developed by BBK to jumpstart sales and distribution. In the foreseeable future, OPPO and Vivo will likely sustain the marketing momentum to support their respective internationalization initiative.

**The Road Ahead**

In the second quarter of 2017, Huawei took 20.2% of China’s smartphone market, while OPPO and Vivo combined snatched 35.8%. Ranked No. 4, Xiaomi retained a 13.0% share, topping both Apple and Samsung.\(^\text{75}\) Lenovo, still seeking to make a comeback in the Chinese market, appeared to settle on a more distinct strategy for the first time in years.

However, with the increasing maturity of the Chinese smartphone market, the competition will further intensify. How will the competitive landscape unfold for these vendors? How will their competitive position change? How will they grow market share? Meanwhile, as the Chinese market becomes saturated, international markets such as Southeast Asia, Europe, and Americas will likely become more attractive and vital to these companies. Given the different focus and evolutionary paths of their competitive strategy, which ones will succeed in international markets? What obstacles might they face in their quest for global dominance?


\(^\text{75}\) “The rising of domestic brands in the second quarter, vivo has the highest increasing momentum”, by Muzi, Leiphong.com, July 25\(^\text{th}\), 2017.
Exhibit 1

China’s Smartphone Market Share (%) in Quarters 1 and 2 of 2017

Source: IDC; Drawn by authors

Exhibit 2

Classic Smartphones

Source: Google Images
Exhibit 3

Global Smartphone Shipments (in millions of units) and Annual Growth Rate (%), 2009-2016

Source: Statista; Drawn by authors

Exhibit 4

Worldwide Smartphone Shipments (in millions of units), 2010-2016

Source: IDC; Drawn by Statista
**Exhibit 5**
*Share of Global Smartphone Shipments by Vendor, 2012-2016*

<table>
<thead>
<tr>
<th>Year</th>
<th>Apple</th>
<th>Samsung</th>
<th>Huawei</th>
<th>Lenovo</th>
<th>Oppo</th>
<th>Vivo</th>
<th>Xiaomi</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>43.7%</td>
<td>44.1%</td>
<td>46.1%</td>
<td>38.5%</td>
<td>5.0%</td>
<td>3.3%</td>
<td>18.7%</td>
<td>3.6%</td>
</tr>
<tr>
<td>2013</td>
<td>43.3%</td>
<td>44.9%</td>
<td>4.4%</td>
<td>4.0%</td>
<td>5.7%</td>
<td>5.2%</td>
<td>2.6%</td>
<td>3.3%</td>
</tr>
<tr>
<td>2014</td>
<td>24.4%</td>
<td>14.8%</td>
<td>16.1%</td>
<td>22.3%</td>
<td>21.2%</td>
<td>14.6%</td>
<td>12.5%</td>
<td>3.6%</td>
</tr>
<tr>
<td>2015</td>
<td>22%</td>
<td>7.4%</td>
<td>9.5%</td>
<td>3.6%</td>
<td>4.6%</td>
<td>5.7%</td>
<td>14.8%</td>
<td>6.8%</td>
</tr>
<tr>
<td>2016</td>
<td>21.2%</td>
<td>14.6%</td>
<td>9.5%</td>
<td>6.8%</td>
<td>4.6%</td>
<td>5.7%</td>
<td>14.8%</td>
<td>3.6%</td>
</tr>
</tbody>
</table>

Source: Statista; Drawn by authors

**Exhibit 6**
*Comparison of Global Shipments and Chinese Shipments (in millions of units), 2012-2016*

<table>
<thead>
<tr>
<th>Year</th>
<th>Global Shipments</th>
<th>Shipments in China</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>673</td>
<td>214.19</td>
<td>32%</td>
</tr>
<tr>
<td>2013</td>
<td>1,044</td>
<td>351.27</td>
<td>35%</td>
</tr>
<tr>
<td>2014</td>
<td>1,231</td>
<td>423.3</td>
<td>34%</td>
</tr>
<tr>
<td>2015</td>
<td>1,320</td>
<td>429.9</td>
<td>33%</td>
</tr>
<tr>
<td>2016</td>
<td>1,399</td>
<td>467.3</td>
<td>33%</td>
</tr>
</tbody>
</table>

Source: Statista; Drawn by authors
Exhibit 7
Users’ Average Time Spent per Day on Smartphones in China (in minutes), 2011-2017

Exhibit 8
Smartphone Users in China and the US (in millions) and Annual Growth Rate (%), 2013-2016

Source: eMarketer; Drawn by authors

Source: Statista; Drawn by authors
### Exhibit 9

*Global Smartphone Shipments Annual Growth Rate (%) by Region, 2013-2016*

<table>
<thead>
<tr>
<th>Region</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>27.4%</td>
<td>7.8%</td>
<td>0.2%</td>
</tr>
<tr>
<td>China</td>
<td>9.4%</td>
<td>-1.9%</td>
<td>16.8%</td>
</tr>
<tr>
<td>Western Europe</td>
<td>10.8%</td>
<td>5.9%</td>
<td>-2.8%</td>
</tr>
<tr>
<td>Central &amp; Eastern Europe</td>
<td>36.1%</td>
<td>3.2%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Latin America</td>
<td>57.9%</td>
<td>-0.1%</td>
<td>-1.2%</td>
</tr>
<tr>
<td>Middle East &amp; Africa</td>
<td>36.1%</td>
<td>16.0%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Emerging APAC&lt;sup&gt;1&lt;/sup&gt;</td>
<td>53.4%</td>
<td>33.2%</td>
<td>6.2%</td>
</tr>
<tr>
<td>Developed APAC&lt;sup&gt;2&lt;/sup&gt;</td>
<td>-4.7%</td>
<td>12.7%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

1. Emerging APAC – India, Indonesia, Kampuchea (Cambodia), Malaysia, Philippines, Thailand, Vietnam
2. Developed APAC – Australia, Hong Kong, Japan, New Zealand, Singapore, South Korea, Taiwan

Source: Statista

### Exhibit 10

*Shipments of Smartphones in China by Brand, 1st Quarter 2017*

**Domestic Players Dominate China’s Smartphone Market**

Shipments of leading smartphone manufacturers in China in Q1 2017 (in million units)

![Chart showing smartphone market shares for Huawei, Oppo, Vivo, Apple, Xiaomi, and Samsung in Q1 2016 and Q1 2017](chart.png)

Source: Counterpoint Research; Drawn by Statista
Exhibit 11

*Smartphone Sales Forecasts in China (in millions of units), 2011-2015*

Source: Credit Suisse; Drawn by authors

Exhibit 12

*Vendors’ Market Share of Smartphone Shipments in China, 2013-2016*

Source: IDC; Drawn by authors
Exhibit 13
Global Market Share by Smartphone Vendors by Year, 2010-2016

Exhibit 14
Global Smartphone Shipments by Vendors (in millions of units), 2007-2016

Source: IDC; Drawn by authors
**Exhibit 15**

*Huawei’s Business Revenue and Division in 2016*

Source: Huawei’s 2016 Annual Report; Drawn by Huawei

**Exhibit 16**

*Top Five Smartphone Vendors in Shipments and Market Share (in millions of units), 2015*

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Samsung</td>
<td>324.8</td>
<td>22.7%</td>
<td>318.2</td>
<td>24.4%</td>
</tr>
<tr>
<td>Apple</td>
<td>231.5</td>
<td>16.2%</td>
<td>192.7</td>
<td>14.8%</td>
</tr>
<tr>
<td>Huawei</td>
<td>106.6</td>
<td>7.4%</td>
<td>73.8</td>
<td>5.7%</td>
</tr>
<tr>
<td>Lenovo</td>
<td>74.0</td>
<td>5.2%</td>
<td>59.4</td>
<td>4.6%</td>
</tr>
<tr>
<td>Xiaomi</td>
<td>70.8</td>
<td>4.9%</td>
<td>57.7</td>
<td>4.4%</td>
</tr>
<tr>
<td>Others</td>
<td>625.2</td>
<td>43.6%</td>
<td>599.9</td>
<td>46.1%</td>
</tr>
<tr>
<td>Lenovo &amp; Motorola</td>
<td>73.9</td>
<td>5.16%</td>
<td>93.7</td>
<td>7.20%</td>
</tr>
</tbody>
</table>

Source: IDC Worldwide Quarterly Mobile Phone Tracker, January 27, 2016
Exhibit 17

Lenovo’s Business Revenue and Division in 2016-2017

Source: Lenovo Annual Report; Drawn by Lenovo Group Limited

Exhibit 18

OPPO and Vivo Marketing Examples

Source: Vivo’s official Philippine website; Newlaunches.com
Exhibit 19

OPPO and Vivo Marketing in India

Source: Tencent Technology – Deep coverage