

Huawei In Europe: A Way to High-End Brand

Ivzhenko Yuliia

*Corresponding Author: Ivzhenko Yuliia
Shanghai University, School of Management*

ABSTRACT: *It was March 26, 2019, when Richard Yu, CEO of the Consumer Business Group (CBG) in Huawei Investment & Holding Co., Ltd. (Huawei), was giving a speech on the stage, representing the new flagship smartphone P30 in Paris.⁴² The P30 Pro, Huawei's P30 premium version, with its four rear cameras, promised to "Rewrite the Rules of Photography" and aimed to take on Samsung's Galaxy S10 and Apple's iPhone X. The unveiling of Huawei's flagship in Paris coincided with the visit of Chinese President Xi Jinping to the French capital on March 23-24, where President Emmanuel Macron held a meeting along with German Chancellor Angela Merkel and European Commission President Jean-Claude Juncker to discuss political issues and trade.⁴³ More recently, Huawei has been under much international scrutiny following US allegations that the company's telecoms network equipment could be used for spying. Huawei has strongly rejected the allegations and, on March 6, 2019, sued the US government over the issue. Speaking about the legal action, Huawei Deputy Chairman Guo Ping stated that the US Congress did not present evidences for its ban on company's products and equipment, hence it was unconstitutional.⁴⁴ Meanwhile, the race to roll out 5G technologies was going on. After Huawei has obtained the world's first European Union's certification for 5G Products on April 16, 2018,⁴⁵ the U.S. government has started to worry about potential Chinese meddling in 5G networks and initiated an extraordinary outreach campaign to foreign allies, trying to persuade wireless and foreign internet service providers to avoid telecommunications equipment from China's Huawei Technologies Co. Therefore, the U.S. campaign to block Huawei hardware from being used in 5G networks expanded from domestic to international, when American officials asked the Australian, Canadian, South Korean, German, Italian, Polish and Japanese governments to freeze out the Chinese company.⁴⁶ The ban over Huawei prevented the company from serving its American customers, damaged its global reputation and deprived of an opportunity to serve customers outside the United States. So how will it influence the company's performance on the international smartphone market and the sales of the new P30 flagship? And how did the company, which started as a telecommunication equipment manufacturer, transformed into one of the global smartphone leaders, and became America's opponent in the battle for 5G technologies?*

KEY WORD: *Huawei, High-end brand, smartphone market, B2B, B2C*

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I. A BRIEF HISTORY OF THE COMPANY

In 1987, a former deputy director of the People's Liberation Army Ren Zhengfei founded Huawei Technologies Co. Ltd in Shenzhen.¹ Formed as a private company, during several years it resold private branch exchange (PBX) switches, imported from Hong Kong. Hoping to reverse engineer foreign technologies with local researchers, Ren embarked on independent research and commercialization of PBX technologies in 1990, targeting hotels and small enterprises¹. After two years, Huawei initiated R&D and launched rural digital switching solution.

The path of Huawei's grows, as telecom technology and network manufacturer, began from rural markets in China, where the company generated sales of RMB1.5 billion in 1995. In 1998, it expanded into metropolitan areas of China. By 2000, Huawei generated USD100 million from international markets.¹

In 2002, international market sales of the company reached USD 552 million. In 2005 international contract orders exceed domestic sales for the first time. Afterwards, Huawei was ranked № 3 by Informa in terms of worldwide market share in mobile network equipment and № 1 by ABI in mobile broadband devices having shipped over 20 million units in 2008. The company was ranked № 2 in global market share of radio access equipment in 2009. Besides, Huawei deployed over 80 Single RAN networks among which 28 were commercial LTE/EPC networks by 2010.¹¹

In order to have a competitive advantage over foreign competitors on the international market, the company started to set up its own research and development (R&D) centers worldwide, beginning with the first establishment in India in 1999, continuing with centers in Sweden in 2000, four R&D centers in the United States in 2001 etc. Afterwards, development of R&D centers kicked into high gear and, by 2018, Huawei established 16 R&D centers, 31 joint innovation centers, and 45 training centers worldwide.³ According to the statistics, Huawei's R&D investment increased by 149% from 2014 to 2018, while R&D investment increasing speed of Apple, Microsoft, and Samsung cannot catch up with Huawei during the same time period (See Exhibit 1).

While developing technological and innovation sector, the company also started to cooperate with international telecom providers. Thus, in 2001, Huawei joined International Telecommunications Union (ITU) and in 2004 got its first significant contract win in Europe valued at over USD25 million with Dutch operator, Telfort.¹ In 2005, the company signed Global Framework Agreement with Vodafone⁴ and deployed its multi-service access network (MSAN) and Transmission equipment for BT's 21st Century Network (21CN).⁵ In the end of 2007, the company became a partner to all the top operators in Europe.¹ By 2010, approximately 80% of the world's top 50 telecoms companies worked with Huawei.⁶

Having strong position on the international market, as network and telecom equipment supplier, Huawei started to widen its development borders, taking risks to transform from the company with "business-to-business" (B2B) model to "business-to-consumers" (B2C). From the start, in 2003, Huawei offered low-end, low-margin, white-label feature phones to carriers, who put their own names on the phones and were thus able to provide consumers a cheap option. By 2010, Huawei had developed low-end smartphones priced under USD100 with the carrier's name affixed to them.⁷ Recognizing a great extent of the smartphone market, Huawei's executives declared that handsets should become a core business, alongside the carrier and enterprise businesses.

In 2011, Richard Yu, a Chairman and CEO of Huawei Device, made four strategic decisions that transformed Huawei's device business: from feature phones to smartphones, from white-label to building the Huawei brand, from low-end to mid-range and high-end, and from carrier to open market sales. In addition, Huawei set up the Consumer Business Group (CBG), which, in 2012 launched middle-range and high-end flagship smartphones, such as the Ascend P1, Ascend D1 Quad, and Honor, whose sales soared in developed countries.

In 2013, the company focused on a quality strategy, adhering to a consumer-centric approach and a "Make it Possible" brand proposition. After launching the Ascend P6 flagship, Global brand awareness of Huawei mobile phones saw an annual increase of 110%. In 2015, Huawei shipped more than 100 million smartphones. According to GFK, Huawei ranked № 3 in 2015 global smartphone market, ranked No. 1 in terms of market share in 2015 Chinese smartphone market. By 2016, Huawei shipped 139 million smartphones and increased its global smartphone market share to 11.9%, ranking as one of the top three global players. In 2018, Huawei surpassed USD100 billion in annual revenue for the first time, its annual smartphone shipments (including Honor phones) exceeded 200 million units, cementing the company's position as one of the three world leaders.¹ Currently Huawei operates 64 branch offices around the world (See Exhibit 2).

II. HOW HUAWEI ENTERED THE EUROPEAN TELECOMMUNICATIONS EQUIPMENT MARKET

Huawei established a complex and dynamic global production network in Europe through various investments and business ties. Since its initial investment in 2000, Huawei has integrated 18 European countries, 16 of which are EU members.⁹

The European market for telecommunications equipment is known as one of the most sophisticated worldwide. When it comes about cooperation with the supplier, European network operators are seeking for technical specifications of equipment and long-term, trust-based relations. In order to build up its technological prowess and develop a reputation as a trustworthy equipment supplier, Huawei initially took a route through emerging markets in Africa and Latin America. Afterwards, the company started to enter the European market through the relations with smaller network operators in small markets, providing favourable credit lines and establishing a dense customer support network.

Huawei signed its first major contract in Europe with the Dutch mobile operator Telfort in 2004. In 2005, Huawei became one of the strategic suppliers for British Telecom's twenty-first century network programme. It was the first time, when Huawei supplied a first-tier network carrier, boosting the company's market reputation. By the end of 2007, Huawei cooperated with all major network operators in Europe. In 2014, Huawei signed the agreement with Vodafone to upgrade its networks in 15 countries in Europe and Africa.

In central and eastern Europe Huawei started to approach the market, carrying out single projects without any official offices. In July 2005, Huawei signed its first contract with a small Polish operator Telefonía Dialog.⁹ Afterwards, the company won a big contract with P4, Play network operator, to provide complete UMTS solutions.⁹ In 2016 Huawei signed a strategic partnership with P4 for 10 years that included infrastructure projects, development of the 4.5G network, construction of a wireless network, a transmission network and an IP network and provision of mobile devices.⁸ Later on, Huawei cooperated with the key telecommunication operators in Poland: T-Mobile, Orange, Polkomtel, P4.

III. A WAY FROM WHITE-LABEL SMARTPHONE MANUFACTURING TO BRAND BUILDING

In 2000, the UK operators conducted an auction for 3G licences, which winning binds totalled £22.5 billion.⁴¹ Understanding that this price was unaffordable for smartphone manufacturers, Huawei set a new goal – to develop a low-cost 3G mobile phone platform. Thus, on September 16, 2003, the company cooperated with German company Infineon Technologies to work on the project. They hoped that 3G will come within reach to common smartphone users. In February 2004, Huawei launched the first 3G mobile phone in China with 150 hours battery life. In June 2004, the company started to sale its commercial mobile phones in bulk, which hardware, software, and configuration were developed and produced independently. Since then, Huawei has manufactured mobile phones for operators. At that time, the company adopted ODM (Original Design Manufacturer) strategy, basing on operators' customized mobile phones.⁶⁵ Huawei positioned its product like a component device for its telecommunication equipment.⁶⁴ It followed a consistent business model: according to the operator's needs, meet the quality requirement, saving as much costs as possible. As a result, the company manufactured low-costed mobile phones, even not putting Huawei logo on them.⁶⁵

Although Huawei's 3G mobile phone was a new kind of company's products, it appeared on the international market and influenced the promotion of 3G global usage. In 2007, Huawei's mobile phone shipments exceeded 20 million units. In 2008, the company has already become the world's third largest supplier of CDMA custom handsets. Moreover, in 2009, Huawei's mobile phone shipments went up to more than 30 million units; CDMA mobile phones were ranked second in the world. Unfortunately, not everything went smoothly: significant disadvantages in cooperation with operators gradually emerged. One of the Huawei's executives Yu Chengdong stated: "Customizing is a thankless work. The net profit margin of one mobile phone is only 5%. According to operators' market prognosis, we procure materials 3 month before we receive manufacturing orders. If the market prognosis is not accurate, Huawei have to deal with material excess. Operators are changing their equipment every 3 months, so we have to launch ultra-low-end phones. If we only rely on the operator's channel to push off the ultra-low-end mobile phone, it will lead us to the dead end. Huawei used to sell a lot of low-end mobile phones without a brand in Europe. At the very beginning, we earned some money. But then, after more manufacturers appeared on the market, we did not get any profit".⁶⁶

During 2007-2008, the globalisation of 3G promoted the development of the smartphone market. In 2010, the global smartphone sales increased by 31.8%, comparing to 2009, and reached 1.6 billion units.⁶⁴ Although the smartphone market was rapidly expanding, Huawei's business to consumer was declining. The company didn't develop its own brand and manufactured smartphones for operators; produced wide range of mobile phones, but didn't have any premium product. As a result, Huawei didn't get any profit. Since then, it was evident that ODM business model was not beneficial.⁶⁴

On December 3, 2010, during a high-level Huawei symposium, Ren Zhengfei had clearly pointed out that the customer service department must stop producing phones without the logo, do not rely on operators as a channel and start contact the consumers actively. In November 2011, Ren Zhengfei once again stated that "Huawei should produce a consumer product and transform the company from B2B to B2C".⁶⁵ From then on, Huawei smartphone officially became a key product in company's Consumer Business Group (CBG). Meanwhile, Yu Chengdong, the current leader of Huawei CBG, took over the customer service department. He proposed the idea to transform Huawei mobile phones from the low-end to the middle and high-end. In 2012, Huawei crafted a strategy: to reduce the diversity of smartphone models and focus on high-quality products, which lead to the decision to cut down 30 millions of low-end smartphones.⁶⁴

At the end of November 2011, mobile strategy company Vision mobile, published a research report, which showed that attach rate of smartphone market in the North America and Europe is the highest, 63% and 51% respectively, comparing with Asia Pacific, Africa and the Middle East, and Latin America, where the attach rate is much lower, 19%, 18% and 17% respectively. European and American consumers have a high acceptance of smart phones, and high level of income. Emerging markets such as Asia, Africa and Latin

America seem to have a big market, but consumers' consumption ability there is limited. On this premise, it was very difficult for Huawei to change its "low-end" image on the emerging markets. Therefore, Huawei took mature mobile smartphone markets, such as Europe and North America, as the focus of CBG development.⁶⁴ As the USA government was against Huawei's development in America, Huawei took Europe as a target development area.

After manufacturing white-label phones for telecom operators, it was hard for Huawei to gain a firm foothold in European smartphone market. Tony Rong, Huawei's consumer CMO in Northeast Europe, recalled entering the Northeast Europe market in 2010: "At that time, apart from knowing a few operators' customers, we had no idea about our target clients. Consumers don't know you at all. You have no channel, no brand, no retail."¹⁰ The company decided to conduct research, which lasted more than a year, to understand the consumers need. Afterwards, Huawei launched P1、D1、D2、Mate1 models of smartphones, but the reaction on the market was average and did not stand up to the company's expectation. Despite the first try to represent the brand was not very successful, Huawei did not give up and took further steps. At the beginning of 2013, Huawei launched "make it possible" brand initiative, and delivered "product, channel, brand" strategy to produce premium models of smartphones, so that European consumers can know more about Huawei and recognize its brand.

III. "PRODUCT, CHANNEL, BRAND" STRATEGY

PRODUCT CONCEPT

European consumers are focused on quality-to-price ratio. It became a real challenge for Huawei. The company made a lot of efforts and experienced many difficulties on the way of manufacturing the high-end smartphone. P1 smartphone series was Huawei's first attempt to enter the high-end market and build a brand. It was officially released at the International Consumer Electronics Show (CES) on January 2012.¹¹ Before launching P1 series, the company tried to implement numerous schemes, which were not successful, and spent lots of costs for R&D. Afterwards, Huawei designed D1 series, that was released shortly after P1. However, D1 was discontinued after 6 months, because of the problem with HiSilicon chip. The company had to modify the product. The vice president of Huawei marketing department Shao Yang gave comments on that point: "This process is very important to us. Although, we did not succeed, we gained some experience, for example, failure of D1. Huawei has encountered problems, because of HiSilicon chips in smartphones."¹¹ Despite P1, D1, D2, Mate1 series did not live up to the company's expectations, but Huawei did not give up. The company proved: when there is a will there is a way. Finally, Huawei designed P6 series of smartphone, that was very successful. An authoritative digital magazine in the United States released the top 20 global mobile phone sales list from January to July 2013, where P6 was in the top three smartphones with a strong sales volume of 13.3 million units.²³

Entering a profitable smartphone international market, Huawei recognised that the company should have its own patents for mobile phone manufacturing to withstand severe competition. CEO of Huawei Technologies CBG Yu Chengdong (Richard Yu) once stated that in order to protect manufacturers' interests, every company is looking for an opportunity to initiate patent litigation against its competitors.¹² During 2011-2015, Huawei filed more than 40 lawsuits in the European market, including LTE system, mobile phones, data cards, etc. Patent litigation did not hinder company's development in that region. Specialising on technology, Huawei has been attaching great importance to patents for many years. According to the European patent data, released by the European Patent Office (EPO) in 2014, the company was ranked first, obtaining 1600 patent applications.²⁶ Huawei invests more than 10% of its sales revenue in R&D every year, which expenditure totaled CNY101,509 million in 2018, accounting for 14.1% of the company's total revenue.²⁵ Over the past decade, Huawei has successfully produced HiSilicon chip independently, and become the third smartphone manufacturer in the world, who has created chip R&D technology. It is the first Chinese company, who has produced "core technology". Furthermore, Huawei independently developed Kirin chip, which become the core competitive feature of its smartphones.²⁴

CHANNEL CONCEPT

In order to build its own brand and get rid of the of operators, Huawei also needed to consider how to deliver its products to consumers. "In the European market consumers are really not very sensitive to prices. They more care about the brand itself, which creates dominant position of operators. Thus, for mobile phone manufacturers, it's very important to get subsidies from operators"²⁷, stated Yu Chengdong. Due to long-lasting cooperation, Huawei had very good relations with operators but it did not mean, that there was nothing to worry about. In May 2012, Vodafone and Telefonica, two largest telecom operators in Europe, gave Huawei a

wake-up call, as soon as they announced the cancellation of the subsidy policy for mobile phones. The company realised, that channel expanding would make its products go further in Europe. For instance, in Germany “level of living services and facilities is very high all over the country, many Germans, who live in the countryside, can go to the city only once a year, but no one goes there just to buy a smartphone. It is a German lifestyle, that determines the rise of sales proportion in offline retail stores in the country,”²⁶ claimed Yu Chengdong. He also commented the fact, that Huawei chose big supermarkets and stores to enter the German market: “When you go to Media Market Saturn (MSD), the largest electronic store in Germany, you feel like meeting an old friend in a distant land. MSD has hundreds of stores itself all over the country. In 2014, it ranked №3 with more than 10% of market share.” In China, the e-commerce sales channels largely differ from Europe. In one of the interview Yu Chengdong mentioned: “the offline logistics in Europe is very developed. Consumers trust more to the offline channels than to the e-commerce ones. As it is difficult to copy the domestic online mode, we mainly start from word-of-mouth marketing, and make interaction with consumers on Facebook and Twitter.”²⁶ So, Huawei expanded social channels, established long-term partnerships with operators and retailers, and strengthened retail positions. Its dependence on operators had dropped from 80% in 2012 to 50% by 2013.⁶⁶

BRAND CONCEPT

Once the company came decided to develop its own brand, consumers view on company’s products has radically changed. Initially, foreign mobile phone users did not recognise Huawei as a brand, which was a problem, that the company had to deal with. There are 44 countries, 24 official languages and a huge diversity of cultures in the European region. Huawei had to explore foreign consumers’ lifestyles, needs and preferences. Eventually, the company noticed that European countries are fond of one thing – football. Football clubs in England, Italy, Germany, France and others have a 100-year history and a huge financial support. Being aware of Europeans beloved sport, the company decided to fund football matches. For instance, Huawei sponsored the 2011 Italian Super Cup at the Bird’s Nest Stadium in Beijing.²⁸ In front of ten thousand of live fans and hundred million of global TV viewers, Huawei mobile phones entered the door to sports marketing for mass consumer brands. The company has signed a three-year deal to become the Serie A club’s mobile partner and chief communications supplier. Afterwards, Huawei could use the AC Milan logo for marketing around the world.²⁸

In 2013, Huawei continued to implement sport marketing strategy. In order to advance brand awareness through sports celebrity image, the company sponsored many European strong football teams: Dortmund, AC Milan, La Liga, Arsenal in the Premier League, Saint Germain in Paris etc.⁵⁶ This strategy appeared to be very successful and has been positively received by consumers. By the end of 2013, Huawei’s transformation from B2B to B2C was basically over, ending up with the third position in the list of global smartphone manufacturers, according to reports published by IDC⁵⁷ (See exhibit 4), which made a historical breakthrough.

In order to target the high-end smartphone market segment in Europe, Huawei has continued launching new products. The company designed Mate series of smartphones for business people, which was comparable to Samsung’s high-end smartphones, and P series, which was focused more on technologically sophisticated users, comparable to Apple’s premium smartphones.

On June 18, 2013, London Round House Theatre was covered with a large poster of flagship smartphone, the Ascend P6.³⁰ It was the first time, when Huawei independently held a global product conference. Huawei Ascend P6 was announced as world’s thinnest smartphone for that time, that measured 6.18 mm thick and weighted 120g.⁴⁷ With a stylish design and all-metal case, priced at 499 euros in Europe, it has successfully established a high-end brand image of Huawei smartphones, raising the brand recognition by operators and consumers. By May 2014, global shipments of Ascend P6 reached 4 million units.⁴⁸ On September 4, 2014, Huawei launched Ascend Mate 7 in Berlin, priced at 500 euros, designed for business people, featuring an aviation-grade aluminum case, a 6-inch FHD display, a super eight-core Kirin 925 SoC chipset, and a 4100 mAh lithium polymer battery. By November 2015, 7 million units had been shipped globally.

During the Europe’s biggest consumer electronics show, IFA, on September 2, 2015 in Germany, Berlin, Huawei launched the Mate S flagship with the price tag, starting from 649 euros, which was one of the first smartphones to include a Force Touch display, that can distinguish between a light tap and deep press, enabling access to more functions just by pressing harder.⁴⁹ It is no coincidence that Huawei released its new flagship at the IFA Berlin exhibition. As nowadays it is one of world’s leading trade shows for consumer electronics and home appliances, IFA was a good opportunity for Huawei to present its latest product to the general public and develop its brand awareness among European consumers to the new level. As a result, Huawei Mate S has gained wide acclaim from the global media. For instance, in Poland, after only one week

since being introduced to the market, it won a praise of authoritative technology magazine CHIP Poland and was awarded “Best Choice” award.⁵⁴ The company also released Mate S rose gold version in order to increase the recognition of the Huawei brand among the female consumers.⁵⁰

As Huawei set a goal to build a high-end smartphone brand, the company felt the need to make a step in the world of fashion. Thus, on September 28, 2015, Huawei Consumer Business Group unveiled its first special edition watch in Milan, styled by renowned Italian designer Barnaba Fornasetti. The special edition watch was available only as gifts to guests of the Vogue China tenth anniversary party, sponsored by Huawei, which marked the closure of Milan Fashion Week.⁵¹

On April 15, 2015, the Huawei P8 smartphone was represented at the legendary Old Billingsgate, London’s renowned arts and fashion venue.⁵² By February 2016, shipped more than 10 million Huawei P8 smartphones in Europe and more than 16 million units globally. It is the first Huawei smartphone to achieve higher sales in global markets than in China, signalling a breakthrough in company’s internationalization process.⁵³ In addition, following sport marketing strategy, the company announced the formal signing of a contract with the Bundesliga giant Bayern Munich’s star striker, Robert Lewandowski in November 2015, in the Poland’s capital city Warsaw. Lewandowski therefore became the Chief Brand National Spokesman of Huawei’s terminal brand in Poland and North-eastern Europe. In the Czech Republic, Huawei has also established cooperation with well-known hockey star, Jaromir Jagr, and in Norway signed a contract with ski champion Therese Johaug, enhancing the brand image, reputation and recognition. By the end of 2015, Huawei’s brand awareness in the North-eastern European countries averaged more than 60%, while in Serbia and other neighbour countries, reached more than 90%.⁵⁴ After such a great success, the company launched an updated version of the Huawei P8 – the P8 Lite, which made a new breakthrough in Europe. According to AppBrain’s Android device market data, Huawei P8 Lite was ranked as №1 smartphone in Portugal, Spain, Slovakia and Italy, №2 in Czech Republic, №3 in Hungary and Bulgaria.⁴⁰ In addition, P8’s market share significantly grew in Finland, Italy, Czech Republic, Hungary, Slovakia, Poland, Spain and Portugal, while Samsung’s market share begun to decline (See Exhibit 3).⁴⁰

The P9 series of Huawei’s smartphones was released in three variants in London, on April 6, 2016, with a price tag from EUR 599 to EUR 749. In order to improve smartphone quality and user experience, Huawei collaborated with leading camera company Leica and, specially for the new flagship, jointly designed a top-quality dual-lens camera.⁴⁸ Hollywood stars Henry Cavill (starring in “Superman”) and Scarlett Johansson (starring in “Black Widow”) were chosen as global product ambassadors in order to rise the brand awareness among the consumers around the world.⁵⁸ According to a survey by the market research firm International Data Corporation (IDC), in the first quarter of 2016 Huawei’s global shipments of smartphones topped 27.5 million units, boosting its market share to 8.2% from 5.2% in 2015, helping it secure its №3 position in the market after Samsung and Apple.⁵⁵

On February 26, 2017, Huawei launched the P10 series of smartphones at Mobile World Congress in Barcelona, Spain. It was the first time, when the company included their German-optics manufactured Leica Lens on the front for the device for better selfies. Huawei’s chief design officer, Joonsuh Kim, said that in the past the flagship “P” smartphones have always had a masculine look and feel, so in their latest device, the company encompassed a fusion of art and technology, and offered the flagship in eight different colours.⁵⁹ Starting from the P10 series of smartphones, Huawei positioned its company as a high-end brand, which combines intelligent technology and innovative fashion. Thus, on September 4, 2017, Huawei for the first time became the partner of Ukrainian Fashion Week in Odessa and demonstrated its latest device. Huawei opened a professional photo studio within the Ukrainian Fashion Week, where everyone was able to make photos on Huawei P10 and P10 Plus cameras to feel themselves staring with glossy covers.⁶⁰ In addition, Huawei also partnered with the world-renowned Saatchi Gallery and launched unique exhibition “From Selfie to Self-Expression” in London, where a series of classic self-portraits, masterpieces of the artists, and selfies were taken with P10 smartphone.⁶¹ This marketing campaigns injected a lot of culture elements into the brand, connected with emotions and lifestyles of the local consumers, and helped the company to raise its image as a high-end brand. As a result, P10 became Huawei’s best-seller smartphone of 2017 in Central and Eastern Europe. According to the report of the leading global technology market analyst firm Canalys, Huawei’s smartphone shipments in Central and Eastern Europe overtook Apple’s in the second quarter of 2017 for the first time.⁶⁷ Huawei shipped 1.8 million units of smartphones, which was 12% of the market pie, beating Apple by fewer than 50,000 phones (See exhibit 5).

On March 27, 2018, Huawei Consumer Business Group unveiled Huawei P20 and P20 Pro at an exclusive launch event held at the iconic Grand Palais in Paris. The new flagship represented company's new generation of smartphones that include the world's first Leica triple camera, combines technology and art "to bring to life ground-breaking smartphone experience".⁶⁸ Four weeks after becoming available for purchase in Europe, the P20 Pro outsold last year's P10 Plus by 316%, with the majority of its sales in the United Kingdom, Germany, and France.⁶⁹ According to Canalys analysis, in the fourth quarter of 2018, Huawei's smartphone market share in Europe grew to 23.6%.⁷⁰ Meanwhile, Samsung fixed an annual drop of smartphone shipments in Europe to more than 10%. Moreover, Apple's smartphone shipments also dropped down to 6% (See exhibit 6). Hence, by the end of 2018, the P20 Pro became Huawei's most successful smartphone in Europe.

The company won the European consumers' heart not only thanks to the technological update of the smartphones. Huawei choose the Ukrainian singer Tina Karol, well-known in Europe after the Eurovision Song Contest, to be an ambassador of the P20 flagship.⁷³ Positioning Huawei as a brand, which is closely connected with fashion, the company sponsored Fashion week in Belarus, presenting the P20 smartphone in 2018⁷¹ and the flagship P30 in 2019⁷². Having great experience sponsoring the Fashion week events worldwide, the company decided to go further and on May 9, 2019, launched the "Fashion Flair" project. Partnering with Anna Yang, Creative Director and founder of fashion label ANNAKIKI, Huawei unveiled the first ever AI driven fashion collection with a live fashion show, hosted at the iconic SuperStudio+ in Milan, in front of 500 guests from around the world.⁷⁴

After such a bright representation and technological update, Huawei P30 became one of the most popular smartphones in Europe. According to IDC report, in the first quarter of 2019 Huawei became the second-largest smartphone vendor in the world after Samsung, selling more smartphones than Apple (See exhibit 7). However, the leading position of Huawei on the European smartphone market was threatened by the U.S., as Donald Trump stated that Huawei "cannot be trusted" and pose security threat.⁷⁵ In May 2019, American President issued an executive order barring US companies from using Huawei technological equipment.⁷⁶ In reaction, a number of American firms began to back away from their business with Huawei, which also had a great influence on the partnership with European countries. After the U.S. government restricted Google from doing business with Huawei, the company met the threat to lose Android operating system updates. As the blacklist limited the company's access to Google apps such as Gmail and YouTube, which are essential for most Europeans, there was a high risk to lose lots of consumers.⁷⁷ Despite the US-Huawei ban, Huawei managed to sell more devices in the third quarter of 2019 (11.6 million) after moving just 8.5 million units in the second quarter. However, the company saw no growth in the third quarter of the year for number of sales, though it still managed to maintain its second position in market European market share at 23.9% (See exhibit 8). Although Huawei had a strong position on the international market, the conflict with America influenced company's global shipments. According to the data released by Canalys, Huawei's shipments declined to 7%, comparing to the end of 2018, remaining on the third place on the global smartphone market, beneath Apple and Samsung, which were ranked first and second respectively (See exhibit 9).

IV. GEOGRAPHICAL DIVISION OF LABOUR IN EUROPE

The geography of Huawei's European activities suggests a specific division of labour along functional lines of research, sales and marketing, technical support, manufacturing and logistics. The last three functional areas are located in particular in CEE countries, while R&D related activities are spread around western Europe – the only research centre in central and eastern Europe is located outside the EU, in Russia. The company's sales and distribution activities for this region operate out of its regional headquarters, Warsaw and Düsseldorf. Poland specialises in sales and marketing for CEE and Nordic countries. Hungary focuses on manufacturing (through EMS providers) and logistics (European Supply Centre). Finally, Romania is a substantial hub that provides technical support for deployment services around Europe. It is designated as Huawei's Global Service Centre, financial centre and Global Network Operation Centre.⁹

Huawei obtains 18 R&D centers in all over the Europe, making it the region with the most R&D centres of the company worldwide. These centers focus on fundamental research and highly innovative projects. Huawei opened its first European R&D centre in Kista in 2000, Sweden, a location that has become a global centre for telecommunications technology research and development. In the following 16 years Huawei has expanded its research activities in Europe considerably, establishing 18 R&D centres in 11 Western European countries and Russia, employing around 1,570 researchers. The small size of these R&D centres (from 10 employees in Paris, to 350 in Kista and 500 in Moscow) suggests that they are research oriented, developing and acquiring new knowledge, with the help of a small number of highly trained specialists working on leading-edge technologies and often focusing on fundamental research. In addition, the company operates 19 joint innovation

centres in Europe to sustain cooperation with its main customers, focusing in particular on joint application development.⁹

Romania is one of the most important countries in Central and Eastern Europe for Huawei. It is a regional hub, that has a Global Service Center (CGS) and a Global Network Operation Center (GNOC) in Bucharest, which provides technical support, offers parameter setups and software upgrades to European customers, as well as other clients in the world.¹⁷ “Romania is and will remain one of the most important countries in Central and Eastern Europe for Huawei. Since our official opening in Romania, things have greatly developed. At the moment, besides Huawei’s headquarters in Romania, we have two other centers here: the Global Service Center (CGS) and the Accounting Shared Services Center (ASSC), centers we develop and in which we invest each year,” Jim Lu, president of CEE & Nordic Region Huawei Technologies, told local Wall-street.ro.¹⁹ At the end of 2018, Huawei Romania’s telecommunication products and services currently reached over 72% of Romania’s population, while serving over 35 European countries that have devices or use Huawei services. Huawei Romania currently has 2,053 employees, of which 81% are Romanians, who are mostly engineers.¹⁰ They are paid wages that are competitive on the Romanian labour market. These employees are often posted to other European countries to serve clients there directly. As the workforce in Romania is substantially cheaper than in Western Europe, Huawei is able to hire fewer people in higher-cost locations and do as much technical support as possible. This country is particularly well suited, as a location, to be exploited through this strategy, as its education system has a good record of producing software engineering expertise.⁹ In addition, Huawei Romania has partnerships with over 25 major companies and is estimated to have created over 1,500 jobs directly, along with 3,500 indirectly created through collaborative firms. Up to 2019, the office of representation has formed up to 5,000 employees for its partners and has supported the training of many experts in the field of telecommunication equipment delivery.¹⁰

Over the years, with the help of Huawei, a number of significant projects for telecom networks in Romania have been developed, among which: RAN-Sharing project for Vodafone: optimization of 3G and 4G networks; IP Call for Telekom Romania; LTE project for Orange: 4G network construction and 3G networking; Broadband network access projects and wireless network construction for RDS & RCS; Ro-Net National Project.¹⁰ In collaboration with the Ministry of Education and Research, the Romanian Ministry of Communications and Information Society and alongside important partners, Huawei has contributed to supporting the local educational environment by developing programs for students and technical universities: a state-of-the-art fiber optic communications technology laboratory at the Faculty of Electronics and Telecommunications, Polytechnic University of Bucharest in 2010; the “Seeds for the Future program” in seven local universities between 2014 – 2016; the HAINA program with investment amounted to USD 100000, in “Gheorghe Asachi” Technical University in 2018. Within these programs, young people had the opportunity to visit the Huawei headquarters in Shenzhen to work, learn and gain a unique living experience in China.¹⁰

Huawei Poland was primary established to serve the local telecom equipment market. However, from 2008 the company started to concentrate its sales and marketing activities in Warsaw. In 2008 Huawei established CEE & Nordic, making it the regional centre for Central and Eastern Europe and Scandinavia. It focuses on sales-related functions, such as: technical support, sales and logistics, administration and HR, marketing and purchase.

Huawei serves all the top operators in Hungary (including Telenor, Vodafone, Deutsche Telekom) and 70% of its population through products and services. The company launched its European Supply Centre in this country in 2009.⁹ Huawei’s Hungary-based Supply Centre is the second biggest operation of its kind in its global production network and serves as a production and logistics centre for 55 countries in Europe, North and West Africa, Russia, Central Asia and the Middle East⁹. Huawei has focused on Hungary, as manufacturing and logistics centre for Europe, because it is confident about investment environment of the country, even after the global financial crisis and its impact.

V. CHALLENGES

POLITICAL CHALLENGES

Huawei is a technological giant, which faced a lot of challenges on the way of establishing a high-end smartphone brand. Political environment and international relations have always influenced the company’s development on the global market. Huawei has always trying to target the American consumers but the U.S. government have been against Chinese company’s development on its territory.

Thus, when Huawei was expected to announce at CES that the Mate 10 Pro would be sold through AT&T, the company did not get carrier support in the U.S. Hereafter, in February 2018, FBI claimed that Huawei and ZTE pose threats to the US, as positions of power inside American telecommunications networks

provides the capacity for Chinese companies to steal information and conduct undetected espionage.⁷⁸ The occurrence mentioned above happened in the light of the U.S. – China trade war and the race to roll out 5G, which made the relations between these two countries more complicated.

On April 16, 2018 Huawei obtained the world's first European Union's certification for 5G Products, which made the U.S. government to worry about potential Chinese meddling in 5G networks.⁴⁵ Thus, America started an international campaign to block Huawei hardware. As the United States, Britain, Canada, Australia and New Zealand are members of Five Eyes alliance, which shares intelligence to combat espionage, terrorism and global crime, American government warned these countries about Huawei's equipment safety risks. As a result, in August 2018, Australia banned Huawei from enrolling 5G network, citing a security threat to its infrastructure. In November the same year, New Zealand's intelligence agencies rejected the request of telecommunications services provider Spark New Zealand Ltd. to use Huawei's 5G equipment. Under pressure from Washington, the Canadian government conducted a national-security review to determine whether Canada should join other Five Eyes partners in banning Huawei. However, Huawei Canada vice-president Scott Bradley stated that Huawei is not a national-security threat and it would continue the cooperation to enrol 5G network.

⁸⁸ The UK also continued to work with Huawei, despite the U.S. security agencies warnings. Huawei had repeatedly denied the allegations, which have been exacerbated by its founder's close links to the Chinese military.⁸⁹ Watching the concerns of Five Eyes alliance and the tendency to band Huawei, Germany's top cybersecurity officials claimed they had not seen any evidence for the espionage allegations against the Chinese company.⁹⁰

While the U.S. was implementing the campaign to block Huawei's hardware, a new scandal was lying in wait for the company. On December 6, 2018, Huawei's chief financial officer (CFO), Meng Wanzhou, who is also the Ren Zhengfei's daughter, was arrested in Vancouver, Canada at the request of the US over alleged Iran sanctions violations. The U.S. claimed that Meng lied to major banks including HSBC about Huawei's relationship with a subsidiary in Iran called Skycom, in order to obtain banking services. Huawei denied any wrongdoing.⁷⁹ Awaiting a hearing on her possible extradition to the US, Huawei's CFO was granted USD10 million bail by Canadian court.⁸⁰ During the interview to CBS, Ren Zhengfei stated that his daughter's arrest was politically motivated: "I think both China and the United States are of large scale. And while those powers clash, our company is as small as a tomato. We do not carry that big weight, and neither does Miss Meng Wanzhou. And I don't think Meng Wanzhou has anything to do with the clashes between the two powers".⁸¹ In March 2019, Canada agreed to proceed with the U.S.'s extradition request⁸² and determine the date of the trial on January 20, 2020⁸³. When the date of hearing came, lawyers for Meng opposed the Canadian prosecutor's arguments saying her alleged actions are not a crime in Canada because the charges of bank fraud are dependent on violating U.S. sanctions against Iran. Canada had no sanctions against Iran when the extradition process began. The judge said she would reserve her decision for a later date. The next court dates are scheduled for June and November.⁸⁴

Along with Meng Wanzhou trial, Huawei had to deal with other problems. On January 11, 2019, Huawei's sales director for public-sector clients in Poland, Wang Weijing, and a former Polish security agent were arrested for allegedly spying for China. After this incident, Huawei claimed that Mr. Wang's actions had no relation to the company and, as this scandal brought Huawei into disrepute, the company decided to dismiss him. Afterwards, Poland's internal affairs minister, Joachim Brudziński, called for the European Union and Nato to work on a joint position over whether to exclude Huawei from their markets.⁸⁷ Thus, the discussion whether to ban the company started in Italy. In February 2019, Lega party lawmakers called on Italy's Parliament to use its industrial veto to block Huawei.⁹¹ However, on December 23, 2019, the Italian industry minister stated that the company should be allowed a role in Italy's future 5G network.⁹² As these incidents were damaging Huawei's reputation worldwide, in March 2019, the company sued the U.S. government over equipment ban. Huawei Deputy Chairman Guo Ping said the US Congress had failed to present "any evidence" for its ban on Huawei products and equipment and was thus "unconstitutional."⁹³

In response to this, on May 15, 2019, President Trump signed an executive order, barring U.S. companies from using telecoms equipment of Chinese companies like Huawei.⁹⁴ Following American administration's decision, Google cut off Huawei phones from future Android updates, which meant that the company's upcoming smartphones outside China would no longer get access to apps and services like Gmail and Google Play.⁹⁵ America temporarily loosened restrictions, so Huawei and Google could still work together to keep current Huawei Android phones like the Huawei P30 Pro supplied with security updates and Google's

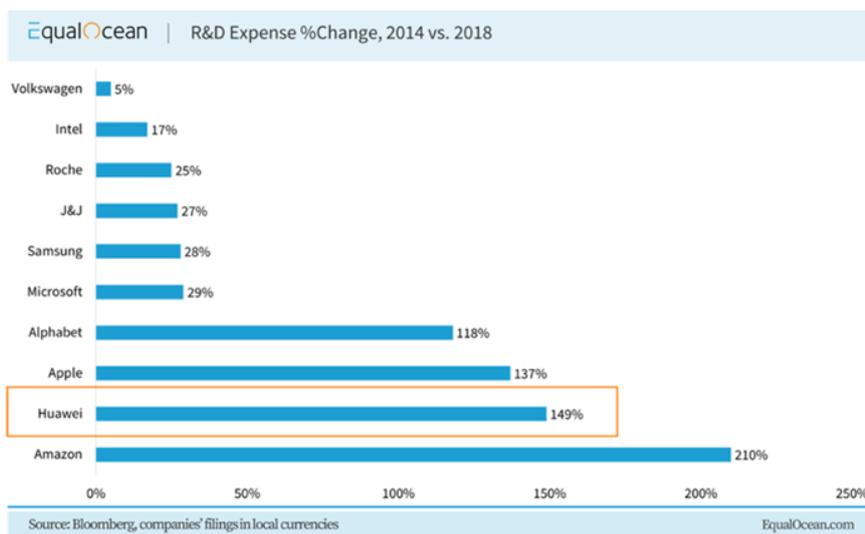
Android services through August 19, but losing Google’s Android support for future phones could spell disaster for Huawei’s business and impact the global smartphone market as a whole. Hence, the company started to work on its own operating system and own Huawei app store as an alternative to Android software. On August 2019, the company announced it was developing a new operating system called HarmonyOS, which was “completely different from Android and iOS”, according to Richard Yu.⁹⁶

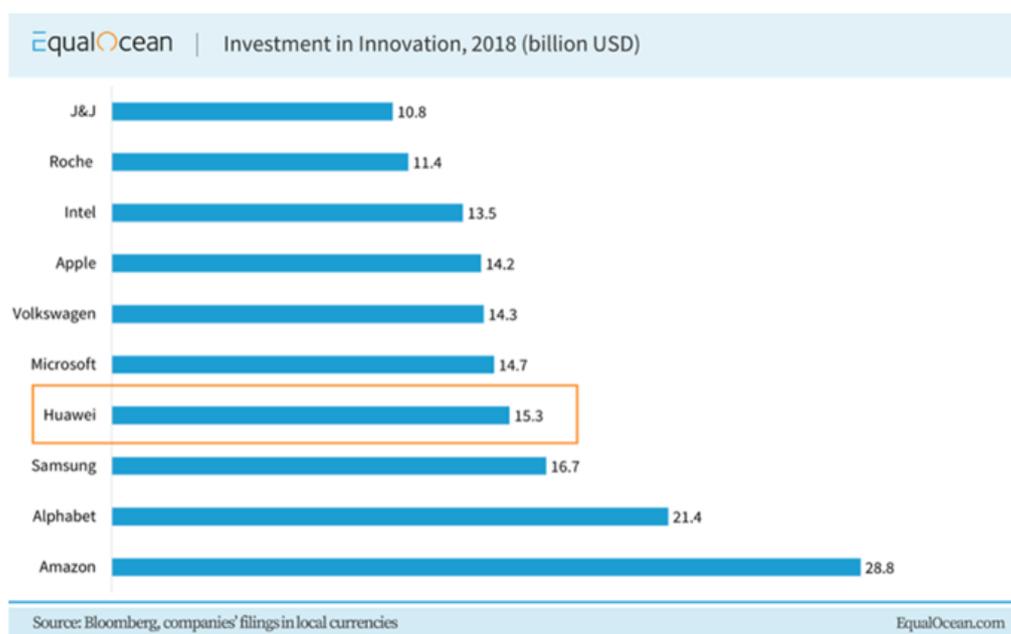
Consequently, Huawei has launched its latest smartphones the Mate 30 and Mate 30 Pro without many of the apps typically pre-installed on Android handsets. The new flagship also does not feature Google’s Play Store, which is the normal way users outside China install third-party software on to Android 10 phones. To address this, Huawei has pre-loaded new alternative apps of its own. A spokesman for the Chinese firm told the BBC that Facebook, Instagram and WhatsApp would all be available via Huawei’s own store, called the Huawei App Gallery. Analysts suggest sales have started to suffer in Europe after the US added Huawei to a blacklist, that prevents many companies from providing the Chinese company with their latest tech. Huawei’s executives stated that it was going to be very difficult to get Europeans to embrace the phones, because they would be very concerned about missing apps they rely on every day.⁹⁷

CULTURAL CHALLENGES

Huawei is a multinational electronic company with a specific culture, that was established in Chinese environment. The slogan “plain living and hard work” requires employees to devote themselves entirely to the company, continuously work overtime, and hereby contribute to China’s economic development.⁹ Huawei conveys this spirit to all the branches overseas. In central and eastern Europe, the company has a centralised hierarchical management structure, which relies on Chinese workers. For instance, in Romania, key management positions in local operations are held by Chinese employees, who periodically report to headquarters in Shenzhen. According to interviews, Romanian employees found it difficult to engage with their Chinese colleagues, who work as a separate group.⁹ In Hungary, 60% of employees are Hungarian and the rest are Chinese nationals. In Poland, 60–65% of employees in Huawei’s CEE & Nordic subsidiary are Polish and the rest are Chinese nationals. Following the centralised model, Huawei CEE & Nordic controls and manages all country offices in the two regions, where all projects need to get the approval of the Warsaw centre. During the Warsaw office interview (05.04.2016), polish employees stated that, in fact, there are two companies: one comprises Polish employees and the other Chinese ones. For example, Chinese workers may hold meetings after 6 pm, while the Polish employees are ready to leave the office. In the Hungarian subsidiary, the percentage of Chinese workers is higher, than the Hungarian. Thus, managers are mostly Chinese and meetings sometimes may be held in the Chinese language, which is not favourable for local workers. Due to hierarchy in the decision-making process, communication and manners employees feel the difference between Western and Chinese business cultures. Hence, Huawei organizes trainings for local workers, where they can learn Chinese culture and take Chinese language courses. Chinese employees also go for special trainings, before work in European headquarters.⁹

EXHIBIT 1
CHINA SMARTPHONE MARKET SHARE (BY QUARTER)





Source: <https://equalocean.com/high-tech/20190430-huaweis-investment-in-rd-ranks-a-leading-position>

**EXHIBIT 2
HUAWEI BRANCH OFFICES AROUND THE WORLD**

| | | | | | | | |
|----------------------|---------------------|----------------|-----------------|----------------------|------------|--------------|-------------|
| Africa | 1. | Algeria | 2. | Egypt | 3. | Ethiopia | |
| | 4. | Morocco | 5. | Nigeria | 6. | South Africa | |
| | 7. | Tunis | | | | | |
| | Asia Pacific | 8. | Australia | 9. | Bangladesh | 10. | China |
| | | 11. | Hong Kong S.A.R | 12. | India | 13. | Indonesia |
| | | 14. | Japan | 15. | Kazakhstan | 16. | Malaysia |
| | | 17. | New Zealand | 18. | Pakistan | 19. | Philippines |
| 20. | | Singapore | 21. | Thailand | | | |
| | | | | | | | |
| Europe | 22. | Austria | 23. | Belgium | 24. | Bulgaria | |
| | 25. | Czech Republic | 26. | Denmark | 27. | Estonia | |
| | 28. | Finland | 29. | France | 30. | Germany | |
| | 31. | Greece | 32. | Hungary | 33. | Ireland | |
| | 34. | Italy | 35. | Latvia | 36. | Lithuania | |
| | 37. | Luxembourg | 38. | Netherlands | 39. | Norway | |
| | 40. | Poland | 41. | Romania | 42. | Russia | |
| | 43. | Spain | 44. | Sweden | 45. | Ukraine | |
| | 46. | United Kingdom | | | | | |
| | | | | | | | |
| Latin America | 47. | Argentina | 48. | Brazil | 49. | Chile | |
| | 50. | Colombia | 51. | Ecuador | 52. | Mexico | |
| | 53. | Peru | 54. | Venezuela | | | |
| | | | | | | | |
| Middle East | 55. | Bahrain | 56. | Iraq | 57. | Kuwait | |
| | 58. | Oman | 59. | Qatar | 60. | Saudi Arabia | |
| | 61. | Turkey | 62. | United Arab Emirates | | | |
| | | | | | | | |
| North America | 63. | Canada | 64. | U.S.A. | | | |

Source: <https://e.huawei.com/en/bran>

EXHIBIT 3

HUAWEI P8 AND P8 LITE ON THE EUROPEAN SMARTPHONE MARKET 2017
Huawei P8 vs. P8 Lite in Central, Southern and Eastern Europe, 2017

| | CZ | ES | FI | HU | IT | PL | PT | SK |
|---------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| P8 Lite | 3.2% | 2.8% | 2.8% | 4.7% | 3.7% | 4.2% | 3.5% | 3.4% |
| P8 Lite 2017 | 0.7 | 1.1% | 1.9% | 1.3% | 1.4% | 0.9% | 1.2% | 0.5% |
| Total | 3.9% | 3.9% | 4.7% | 6.0% | 5.1% | 5.1% | 4.7% | 3.9% |

European market share (percentage of top 250 Android devices in each country)

| | AT | BE | BG | CH | CZ | DE | DK | ES | FI | FR |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Samsung | 67.7% | 69.3% | 47.4% | 78.9% | 41.7% | 71.5% | 61.7% | 47.9% | 47.9% | 67.1% |
| Huawei | 15.8% | 15.7% | 14.8% | 7.3% | 21.6% | 9.2% | 16.9% | 15.9% | 28.8% | 7.9% |
| BQ | | | | | | | | 11.8% | | |
| LG | 3.6% | 1.9% | 3.6% | 1.0% | 2.4% | 2.2% | 1.9% | 6.0% | 2.4% | 1.5% |
| Sony | 5.6% | 2.4% | 3.5% | 4.8% | 4.1% | 6.5% | 8.0% | 3.8% | 6.3% | 8.0% |
| Xiaomi | 0.2% | | 1.3% | 0.4% | 7.2% | 0.3% | | 4.1% | 0.2% | 0.2% |
| Lenovo | 0.1% | 0.5% | 18.6% | 0.1% | 14.5% | 0.4% | 0.9% | 0.2% | 2.0% | 0.3% |
| Motorola | 1.6% | 2.1% | 0.2% | 0.4% | | 2.5% | 1.2% | 2.7% | 1.1% | 1.1% |
| Other | 5.5% | 8.1% | 10.5% | 7.1% | 8.4% | 7.5% | 9.5% | 7.6% | 11.2% | 13.8% |

| | GB | HU | IT | NL | PL | PT | RO | RU | SE | SK |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Samsung | 71.3% | 55.5% | 62.0% | 76.6% | 47.1% | 45.5% | 64.9% | 49.2% | 72.3% | 42.7% |
| Huawei | 3.9% | 19.7% | 21.5% | 5.4% | 16.5% | 16.4% | 11.4% | 6.8% | 9.1% | 19.0% |
| BQ | | | | | | 2.2% | | | | |
| LG | 2.8% | 6.5% | 3.8% | 8.6% | 12.0% | 2.2% | 1.9% | 3.5% | 2.0% | 4.9% |
| Sony | 7.7% | 5.2% | 0.6% | 2.4% | 8.1% | 1.4% | 0.3% | 2.9% | 9.9% | 5.8% |
| Xiaomi | 0.3% | 2.9% | 0.5% | 0.2% | 3.9% | 2.5% | 0.3% | 11.4% | 0.2% | 3.9% |
| Lenovo | 0.5% | 3.9% | 0.4% | 0.3% | 5.6% | 0.1% | 3.7% | 8.0% | 1.5% | 16.1% |
| Motorola | 4.7% | | 0.6% | 2.5% | 1.2% | 0.6% | 0.1% | | 1.6% | 2.1% |
| Other | 8.9% | 6.3% | 10.6% | 4.0% | 5.4% | 29.1% | 17.3% | 18.3% | 3.5% | 5.5% |

Source: AppBrain Intelligence, http://www.sohu.com/a/205212492_499322

EXHIBIT 4

TOP FIVE SMARTPHONE VENDORS, SHIPMENTS AND MARKET SHARE, 2013 (UNITS IN MILLIONS)

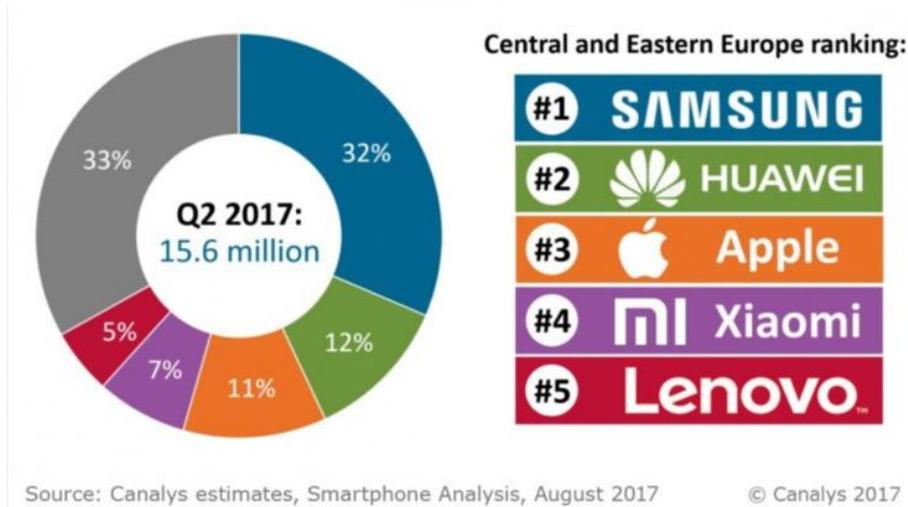
| Vendor | 2013 Shipment Volumes | 2013 Market Share | 2012 Shipment Volumes | 2012 Market Share | Year-over-Year Change |
|--------------|-----------------------|-------------------|-----------------------|-------------------|-----------------------|
| Samsung | 313.9 | 31.3% | 219.7 | 30.3% | 42.9% |
| Apple | 153.4 | 15.3% | 135.9 | 18.7% | 12.9% |
| Huawei | 48.8 | 4.9% | 29.1 | 4.0% | 67.5% |
| Lenovo | 47.7 | 4.8% | 26.3 | 3.6% | 81.1% |
| LG | 45.5 | 4.5% | 23.7 | 3.3% | 91.7% |
| Others | 394.9 | 39.3% | 290.5 | 40.1% | 35.9% |
| Total | 1,004.2 | 100.0% | 725.3 | 100.0% | 38.4% |

TOP FIVE SMARTPHONE VENDORS, SHIPMENTS AND MARKET SHARE, 2013 Q4 (UNITS IN MILLIONS)

| Vendor | 4Q13 Shipment Volumes | 4Q3 Market Share | 4Q12 Shipment Volumes | 4Q12 Market Share | Year-over-Year Change |
|--------------|-----------------------|------------------|-----------------------|-------------------|-----------------------|
| Samsung | 82.0 | 28.8% | 66.7 | 29.1% | 22.9% |
| Apple | 51.0 | 17.9% | 47.8 | 20.9% | 6.7% |
| Huawei | 16.4 | 5.8% | 10.5 | 4.6% | 56.5% |
| Lenovo | 13.9 | 4.9% | 9.4 | 4.1% | 47.3% |
| LG | 13.2 | 4.6% | 8.6 | 3.8% | 53.2% |
| Others | 107.9 | 37.9% | 85.9 | 37.5% | 25.6% |
| Total | 284.4 | 100.0% | 229.0 | 100.0% | 24.2% |

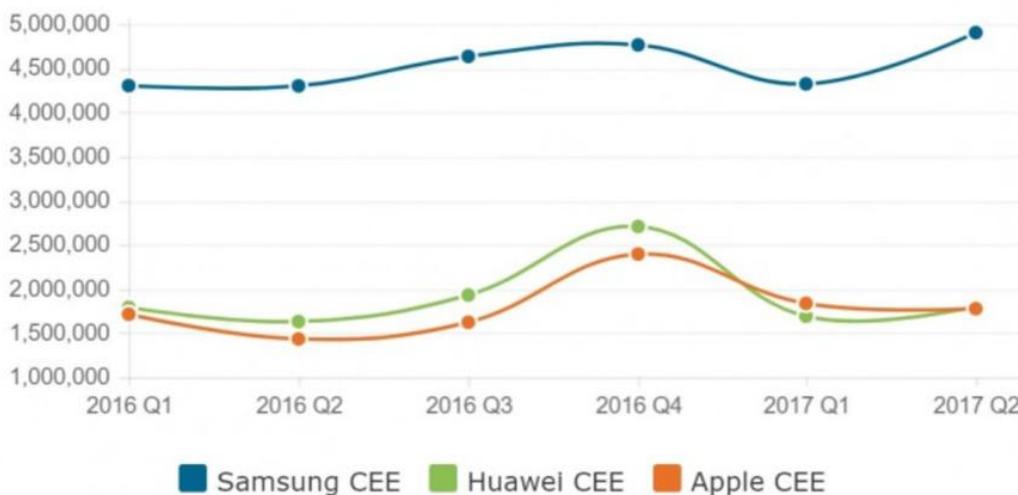
Source: www.idc.com; <https://thenextweb.com/mobile/2014/01/28/idc-smartphone-shipments-passed-1b-first-time-2013-samsung-remains-clear-leader/>

EXHIBIT 5



CANALYS SMARTPHONE ANALYSIS 2017

Smartphones, units by vendor, Q1 2016 - Q2 2017



Source: <https://www.canalys.com>

EXHIBIT 6
EUROPEAN SMARTPHONE SHIPMENTS AND ANNUAL GROWTH
CANALYS SMARTPHONE MARKET: Q4 2018

| Vendor | Q4 2018 Shipment (million) | Q4 2018 Market Share | Q4 2017 Shipment (million) | Q4 2017 Market Share | Annual Growth |
|------------|----------------------------|----------------------|----------------------------|----------------------|---------------|
| Samsung | 16.2 | 28.7% | 16.4 | 28.3% | -1.0% |
| Apple | 14.7 | 26.0% | 15.5 | 26.8% | -5.1% |
| Huawei | 13.3 | 23.6% | 8.6 | 14.8% | +55.7% |
| Xiaomi | 3.4 | 6.0% | 2.1 | 3.6% | +62.0% |
| HMD Global | 1.3 | 2.4% | 1.6 | 2.8% | -18.3% |
| Others | 7.6 | 13.4% | 13.8 | 23.7% | -44.8% |
| Total | 56.6 | 100.0% | 58.0 | 100.0% | -2.3% |

Source: <https://www.canalys.com>

EXHIBIT 7
EUROPE SMARTPHONE MARKET SHARE, Q1 2018, Q1 2019

| Vendor | Q1 2018 | Q1 2019 |
|--------------|-------------|-------------|
| Samsung | 30% | 31% |
| Huawei | 15% | 26% |
| Apple | 23% | 21% |
| Xiaomi | 5% | 4% |
| Alcatel | 1% | 2% |
| Others | 26% | 16% |
| Total | 100% | 100% |

Source: <https://www.canalys.com>

EXHIBIT 8
EUROPE SMARTPHONE SHIPMENTS AND ANNUAL GROWTH
CANALYS SMARTPHONE MARKET PULSE: Q3 2019

| Vendor | Q3 2019 Shipment (million) | Q4 2019 Market Share | Q3 2018 Shipment (million) | Q3 2018 Market Share | Annual Growth |
|--------------|----------------------------|----------------------|----------------------------|----------------------|---------------|
| Samsung | 18.7 | 35.7% | 14.8 | 30.4% | 26% |
| Huawei | 11.6 | 22.2% | 11.7 | 23.9% | 0% |
| Apple | 9.8 | 28.6% | 10.2 | 20.8% | -4% |
| Xiaomi | 5.5 | 10.5% | 3.2 | 6.5% | +73% |
| HMD Global | 0.9 | 1.8% | 1.2 | 2.4% | -21% |
| Others | 5.9 | 11.2% | 7.7 | 16.0% | -24% |
| Total | 52.5 | 100.0% | 48.8 | 100.0% | 8% |

Source: <https://www.canalys.com>

EXHIBIT 9
WORLDWIDE SMARTPHONE SHIPMENTS AND ANNUAL GROWTH
CANALYS SMARTPHONE MARKET PULSE: Q4 2019

| Vendor | Q4 2019 Shipment (million) | Q4 2019 Market Share | Q4 2018 Shipment (million) | Q4 2018 Market Share | Annual Growth |
|--------------|----------------------------|----------------------|----------------------------|----------------------|---------------|
| Apple | 78.4 | 21.3% | 71.7 | 19.7% | +9% |
| Samsung | 70.8 | 19.2% | 69.9 | 19.2% | +1% |
| Huawei | 56.0 | 15.2% | 60.5 | 16.6% | -7% |
| Xiaomi | 33.0 | 9.0% | 26.8 | 7.3% | +23% |
| Oppo | 30.3 | 8.2% | 29.6 | 8.1% | +2% |
| Others | 100.2 | 27.2% | 105.6 | 29.0% | -5% |
| Total | 368.7 | 100.0% | 364.1 | 100.0% | +1% |

Source: <https://www.canalys.com/newsroom/canalys-global-smartphone-market-q4-2019>

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