

ABSTRACT

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<p>In 2020, 3.6 billion people used a smartphone. Companies made huge progress to develop the best smartphone with the best software and hardware. The competition between companies was increasingly hard for the reason that there was not a gap between these companies in terms of technology.</p> <p>This thesis explored the smartphone market by analysing 3 companies: Apple, Huawei and Samsung Mobile in order to understand their vision about the best smartphone. The objective of the writer was to give his vision about the best smartphone according to the different analyses of these companies. Also, to describe the future of the smartphone market.</p> <p>The theoretical framework defined the marketing concepts and the customer relationship management. Then, it described the hardware, software and the different actualities that followed each company. For this thesis, the writer analysed each web site of Huawei, Apple and Samsung Mobile, he used articles from journalists and used social media from companies. Also, he used some keynotes and some introduction of products to better know the different flagship of the companies.</p> <p>Based on the finding of this thesis, it can be concluded that companies stand out from the rest by their different innovations in terms of hardware and by their software in terms of operating system, interface, connectivity, functionalities and services. The hardware is as important as the software. The hardware allows to attract new customers while the software allows to keep them. According to the author, in 2030, there will be more demand for foldable and enrollable smartphones because companies will master this technology, the price will decrease and more and more customers will desire a smartphone with a bigger screen. Then, in order to reinforce their customer relationship management, smartphone brands will invest more and more to develop their operating system, services and connectivity to other devices which will allow to give the best experience to the users and make them want to stay loyal to the company.</p>		
Key words Apple, customer relationship management, foldable smartphone, future, Huawei, innovation, marketing, operating system, Samsung, smartphone, software		

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1 INTRODUCTION

On 12 October 2000, Nokia commercialized their smartphone Nokia 3310 which had a huge success with 126 million phones sold, it's one of the best-selling phones in the world. The Nokia 3310 was a revolution for people because it had some functions which at that time other smartphones didn't have such as: calculator, games, possibility to write long text messages or to personalize the ringtone. (Jowitt 2017.)

In 2007, Steve Jobs presented the first iPhone. It was a revolution in the smartphone market and changed a lot of things such as the way to use a phone for example: watching videos, the possibility to go to internet or even to use a virtual keyboard (Steve Jobs introduces iPhone in 2007 2011). In 2009, Samsung introduced their first smartphone that used the operating system (OS) Android, the Samsung Galaxy i7500 (C'est officiel, Samsung lance son premier smartphone Android, le i7500 ! 2009). In 2010, Samsung began to commercialize their famous smartphones from the range Galaxy S that are one of their most popular flagship ranges. For a couple of years, Samsung and Apple were the main leaders in the smartphone market, also, there was even a little war between their respective ranges: iPhone from Apple and Galaxy S from Samsung (Cain 2020).

Since the commercialization of the first iPhone, other companies came to the market and together, these companies brought their different innovations with the appearance of the new processor, better performance of cameras, technological achievement with folding smartphone, power, new security with face ID or fingerprint. In 2021, all smartphone brands offer us great smartphones with the best technology. What we can notice is that there isn't a gap of technology that separates them in terms of hardware. When a company brings something new in their smartphones, a few months later another company will bring the same. In 2019, almost every brand brought to their smartphones 3 modules of camera to take photos from different angles and in 2020, the revolution was with the screen refresh. Smartphones own almost the same hardware and look the same especially because the supplier of different companies can be the same. For the camera, for most of the brands, the supplier of pieces to make the camera are either Sony or Samsung. However, in terms of hardware, smartphones can have the same

features but they will always be different one from another, especially because of the software. (Asif 2020.)

In this thesis, I will explore the smartphone market by analyzing 3 companies that are Apple, Huawei and Samsung Mobile. The aims of this thesis are to analyze the smartphone market by analyzing these companies about their software, hardware, their strategy of communication, their image and their marketing. Then, another purpose will be to describe the future of the smartphone market according to the findings and my thoughts. Through this thesis, the research questions are as follows:

- Why is the software so important in a smartphone?
- In such a tough competition, how do companies stand out from the rest?
- What is the future of the smartphone market?
- How can a company reinforce its customer relationship management (CRM)?

To get information for the thesis, the concept of research-based thesis will be used. The main information will come from reports, articles, social media. Then, to better know the different products that sell companies, I will use the website of companies, their different keynotes, their social media and their advertising videos. The keynotes and advertising videos of smartphones will come from the platform YouTube.

The limitation of this thesis is that I will only use 3 companies to analyze the smartphone market whereas there are more than 10 companies in the market. Also, all the smartphones that offer companies won't be analyzed. Furthermore, this thesis couldn't describe all the potentials that a smartphone can offer by his hardware, its software, and its connectivity with other devices. For the future of the smartphone market, it will be just my opinion because I don't know yet what kind of smartphone and innovation we could find in the market in 10 years.

2 THEORETICAL FRAMEWORK

Theoretical framework defines the concepts of this thesis. These include the definition of marketing, CRM and the overviews of the companies Apple, Huawei and Samsung.

2.1 Marketing concepts

There are many definitions of marketing but one of the best definitions of marketing is focused on upon customer orientation and satisfaction of customer needs. Marketing is used in the management processes in order to identify, anticipate and satisfy potential customers.

Marketing is surrounded by 5 alternative concepts where the company will use one to build their marketing strategies:

- Production concept is used for consumers that want a product available and cheap. Managers focus on this concept to achieve products in a lot of quantity and low costs.
- Product concept is used for consumers who desire a product with the most qualitative performance and innovative features. In other words, this concept is used to tell the consumers that the product is the best in the market.
- Selling concept is used to increase sales by making promotions and large-scale selling.
- Marketing concept is used to achieve through the needs and wants of the target market to deliver satisfactions to them.
- Societal Marketing concept is used to deliver value to customers to maintain or improve the wellbeing of the consumer and the society. (5 marketing concepts: marketing management philosophies.)

2.2 Customer relationship management (CRM)

The goal of every company is to get, keep, and grow customers. Get by acquiring new customers, keep by retaining profitable customers, then grow by selling new products to these customers. CRM is the way to build a link of trust and loyalty between the company and the customer. This means that the company must understand the customer needs as much as possible.

To develop the CRM, companies need a lot of information and data. So, many companies invest in the software and hardware to capture detailed information on customers which can be used for the marketing especially to segmentate, to target and to position in the market. It allows to know which product will correspond the best to a group of customers and prepare the best promotion in order to attract the most. The most important things to develop the CRM is to listen to the user, especially the complaints because it's an opportunity to get information, to learn more about user needs in order to create a better product for the next time.

To create a CRM, there are a lot of tools such as loyalty cards, special discounts or a customized service to each customer. The customers need to feel special, they need to feel that the company is caring for them, for example with Starbucks coffee where they write our name and they call us by our name to take our order, we feel that we are treated differently.

The consumers need to feel safe and must have a total confidence in the product and the brand. If another brand sells a better product, most of them won't go because they will have a total confidence in the basic company, they know the product, the quality, so, they know what to expect. If the company know that some of their customers are loyal, it allows to create some proactive tactics such as: plan the sale of a product. (Johnsson 2020.)

2.3 Overview of Apple

Apple was created on 1st April 1976 by Steve Jobs and Steve Wozniak. In the year 1980, Apple commercialized the first computers with a graphic interface. In 1985, Steve Jobs left from Apple,

during the decade of 1980, the company had a difficult year. In 1997 Steve Jobs came back to Apple and in 1998, the first iMac was commercialized that allowed Apple to reborn in the market with an important success. On 9 September 2007 at the Macworld Conference and Expo in San Francisco, Steve Jobs presented the first iPhone that was a revolution. During the presentation, Steve Jobs pronounced this sentence that summarizes the success of the iPhone: "Today Apple is going to reinvent the phone". Rarely a device modified so much the habits of the consumer because before this time, the market was dominated by the keypad phones of Blackberry. With the iPhone and its 3,5 inch screen, we could easier watch videos, go on the internet, read articles, things that are common to everyone in 2021. (Silver 2019.)

Apple is a company that innovates and are not afraid to take risks. For example with the iPhone 7 where Apple completely deleted the jack plug that allowed to listen music in order to promote their AirPods, which was the first headphone true wireless from Apple which became a reference in the market of headphone true wireless (Apple – September Event 2016). Compared to some competitors, Apple commercializes between 1 and 5 new smartphones every year, whereas some other brands commercialize more than 10 smartphones every year.

Apple is known across the whole world for their hardware but especially for their ecosystem that is unique in the world. It's their biggest strength, it's easy for everyone to use an iPhone and all other products from Apple such as MacBook, iWatch, iPad, iMac and AirPods because they use the same OS IOS which allows a perfect connectivity between the different devices and gives the best experience to the user. iPhone is a real success, in 2020, there would have been 1 billion of people who use an iPhone and from statista, there would have been approximately 3.6 billion of users of smartphone (Number of smartphone users worldwide from 2016-2026 2021). So, there would be one fourth users of smartphones which own an iPhone in the world (Cybart 2020).

2.4 Overview of Huawei

Huawei was founded in 1987 by Ren Zhengfei, the company began their business in the supply of telecommunications networks to operators by providing some hardware, software and

services for operators telecommunications and companies computer networks (Roll 2018). In 2009, Huawei began to implant themselves in the smartphone market. They became popular with their range Huawei P and Mate that are their most strong ranges. Also, Huawei sells other cheap smartphones in order to have access to a larger consumer. In 2013, Huawei created a subsidiary brand called HONOR in order to commercialize cheap smartphones with good features in terms of hardware allowing Huawei to be competitive in the mid-range smartphone market. A mid-range smartphone is a smartphone we can buy between the price 200€ and 500€. (Lai 2013.)

To be more competitive in camera, Huawei made a partnership with Leica to develop their camera. Their first partnership began with the Huawei P9 commercialized in 2016 (Huawei and Leica camera announce Long-term technology partnership for the reinvention of smartphone photography 2016). Since this collaboration, Huawei is considered as one of the best cameras in smartphones especially since the commercialization of the Huawei P30 sold in 2019.

Huawei is a successful brand, in 2018, Huawei was the second largest manufacturer of smartphones behind Samsung and ahead of Apple. In the second quarter of 2020, Huawei dethroned Samsung and became the world leading seller of smartphones (Share of smartphone unit sales to end users by vendor from the 1st quarter of 2016 to the 4th of 2020 2021). Huawei was a real threat for Samsung, moreover, Huawei commercialized the same year as Samsung their first fold smartphone, the Huawei Mate X in 2019 (Huawei Mate X smartphone folds face out 2019).

However, in 2021, the future of the company is compromised. Huawei has a business in the telecommunication and they were one of the principal actors for the deployment of 5G in the United States (USA). At the beginning of the year 2019, Donald Trump suspected Huawei to work for Pekin and to spy USA with their 5G antenna in order to collect some information and give it to China. For Donald Trump, China is the worst enemy of the USA, especially for business, they are in a trade war. Until today, there is no proof that Huawei had the intention to spy USA or that they worked for China. In May 2019, the White House put Huawei in the dark list of suspect companies to give information to Pekin. This sanction has a huge consequence

on Huawei, for the hardware couldn't use any components from all USA suppliers anymore, they couldn't use the Google Service such as the play store for their next smartphones anymore and their previous smartphones couldn't have any update of Android anymore. (Huawei faces US charges: The short, medium and long story 2019.) Huawei still uses the OS Android in their smartphones but they are going to replace it with their new OS HarmonyOS presented in 2020 where Huawei plans to integrate in their devices progressively in 2021 (Kelion 2020).

2.5 Overview of Samsung Mobile

Samsung Mobile was founded in 1977, it is the telecommunications and IT divisions of Samsung Electronics, a subsidiary of Samsung Group. Samsung Mobile became popular with their famous brand Galaxy S that is one of their most luxury ranges. The OS of Samsung is Android with their own interface ONE UI from 2019 and they use the google services that is Play Store which allows to download applications.

In the smartphone market, Samsung brought some innovations, especially the way to use a smartphone. The example is with their top of the range "Galaxy Note" where the particularity is that the Galaxy Note is a phablet, a smartphone with at least 5 inches with a stylus. In 2011, when Samsung commercialized the first Samsung Galaxy Note, it was one of the first phablets in the market at this moment. (Samsung Galaxy Note official video 2011.)

On 20 February 2019, Samsung entered into another area, during their keynote to celebrate the 10 years of the range "Galaxy S" with their Samsung Galaxy S10. Samsung presented the first foldable smartphone called the Samsung Galaxy Z Fold at the price 2000\$ (Samsung Galaxy fold FULL launch event (unpacking event) (unboxing) 2019). Then, one year later Samsung commercialized another smartphone in the range Galaxy Z, the Galaxy Z Flip (Galaxy Z flip 5G: Official Film – Samsung 2020). The particularity of the Galaxy Z flip is it folds in 2 in order to be transported easier whereas the Galaxy Z fold is used to become a tablet when we unfold him. Today, Samsung Mobile offers 3 products in the top of the range: Galaxy S that is specialized

most of the time in the cameras, Galaxy note for the size of the screen and the stylus and Galaxy Z for their fold smartphones. (All smartphones.)

Samsung not only make flagship, they make cheap smartphones and mid-range smartphones. As a reminder, a mid-range is between 200€ and 500€, and if we want to find a cheap smartphone, it's less than 200€. Samsung is well known for their mid-range smartphones especially with their range Galaxy A where Samsung offers a smartphone with good features at a very good quality price. In the first quarter 2020, the Samsung Galaxy A51 was the top-selling Android with 2,3% of market share, more than the last flagship Samsung Galaxy S20+ at this time where it reached 1,7% of the market share. (Wilde 2020.)

In the fourth quarter 2020, Samsung Mobile retook its place from Huawei as the world leading seller of smartphones. In 2020, Samsung sold 266,7 million smartphones with a market share of 20,6%. From 2012, Samsung is still the world leading seller of smartphones of the year. (Share of smartphone unit sales to end users by vendor from the 1st quarter of 2016 to the 4th of 2020 2021.)

3 RESEARCH METHODOLOGY

This chapter explains the chosen research method for this thesis that is theoretical. Data will come from articles, keynotes of Apple, Huawei and Samsung Mobile where they presented their flagship in order to understand their own vision about the best smartphone and know better their different products. Social media will be used, I will analyze the Instagram of companies to see their strategies of communication. Furthermore, I will watch some smartphones reviews on the platform YouTube to know the strength and weakness of some smartphones. Also, the different keynotes and commercial video will come from the platform YouTube. All this information will be analyzed by me with my knowledge and thoughts about the subject. Below this text, this is the list of articles, social media, keynotes and publications used for this study. (TABLE 1)

TABLE 1. List of articles, social media, keynotes and publications used for this study

1	Keynote of Apple for the presentation iPhone X, from YouTube, 2017
2	Keynote of Samsung Mobile for the presentation of Samsung Galaxy S10 and Samsung Galaxy Fold 1, from YouTube, 2019
3	Keynote of Huawei during the MWC 2019, presentation of mate X, Matebook from YouTube, 2019
4	Keynote of Samsung, unpacked Samsung Galaxy S20 from YouTube, 2020
5	Commercial Video Apple watch Series 6 from YouTube, 2020
6	Commercial video iPhone 12 pro from YouTube, 2020
7	Commercial Video Samsung Galaxy S21 Ultra from YouTube, 2021
8	Commercial video Huawei P40 series from YouTube, 2020
9	Commercial video Huawei Mate 40 series, from YouTube, 2020
10	Galaxy S20 Ultra – Exynos vs Snapdragon, YouTube, 2020
11	Galaxy s21 ultra - Exynos vs Snapdragon, YouTube, 2021
12	The reasons behind Apple’s Customer Loyalty and High NPS, Tim, 2018
13	Website of Apple

TABLE 1 (Continues)

TABLE 1 (Continues)

14	Website of Samsung Mobile
15	Website of Huawei
16	Instagram page of Huawei Mobile / Apple / Samsung Mobile
17	Instagram page of Antoine Griezmann / Vasek Pospisil
18	The reasons behind Apple's customer Loyalty and high NPS, Retently, 2018
19	Samsung recalls note 7 flagship over explosive batteries, BBC, 2016
20	Huawei faces US charges: the short, medium and long story, BBC, 2019
21	Huawei announces its new harmony operating system, BBC, 2019
22	Apple now sells more watches than the entire swiss watch industry, theverge, 2020
23	Numbers of apps available in leading app stores 2020, Statista Research Development, 2020
24	Smartphone market share, IDC, 2021
25	Samsung increased OLED supply for Apple's latest iPhones, The investor, 2019
26	The Samsung Galaxy A51 was the top-selling Android smartphone in Q1 2020, 9to5google, 2020
27	Apple may be building more iPhone 12 pro units to meet strong demand, appleinsider, 2021
28	Apple sold over 90 million iPhones in 3 month, world's biggest smartphone seller, indiatimes, 2021
29	Huawei to cut phone production by over half in 2021, gadgetsnow 2021
30	Huawei's share of global smartphone shipments 2012-2020, by quarter, Statista, 2021
31	Global smartphone sales to end users 2007-2021, Statista, 2020
32	App Gallery
33	iPhone SE, Apple, 2020
34	Petal Search, from the website Huawei

TABLE 1 (Continues)

TABLE 1 (Continues)

35	Galaxy S20 FE - Samsung
36	Samsung Galaxy A80 – ROTATING CAMERA Hands-on Review!, 2019
37	Burns, C. 2020. These Samsung phones get 3 years of updates, like an iPhone
38	play Xbox game pass on your Galaxy phone, 2020 - Samsung
39	A planet-size plan, Apple
40	One plus 7 pro
41	Website: Apple one
42	Galaxy S21: Expert Review Highlights Samsung
43	Galaxy Unpacked April 2021, Official Replay Samsung
44	Galaxy Book Pro, Pro 360: Official Introduction Film Samsung

4 FINDINGS

Thanks to the different sources, this chapter will analyze the hardware, software, marketing, image and CRM of Apple, Samsung and Huawei then, describe the future for these companies.

4.1 The importance of the CRM for Apple

As we know, all the products from Apple own the same OS, it's their biggest strength because they have a total control on their products. Furthermore, Apple has created a great software for their smartphones where for most of the consumers, using an iPhone is very simple, for example with Face-ID. Face-ID is a facial-recognition technology created by Apple where it revolutionizes the way to use a smartphone (Meet iPhone X – Apple 2017). Thanks to Face ID, users don't need to write every time their password to unlock their iPhone or to have access to their bank account for example, their face is enough. It's so useful because it saves time, it recognizes us very fast, brings a security very high and creates a pleasant experience for the user.

Furthermore, writing a password can be annoying sometimes because we can make mistakes, so we have to restart, we lose time and we have an unpleasant experience whereas with face-ID the users need just to look at their iPhone.

Apple is focused on simplicity. The other brands could make better smartphones than Apple with better battery, better camera or more powerful, the consumer will still be loyal to Apple for the only reason that he feels good or, maybe it's because he doesn't have the choice. As I said, the biggest strength of Apple is their OS with iOS especially the fact that all devices such as iPhone, MacBook, AirPods, iPad use the same services and could connect to each other. If I have an iPhone and a MacBook, with the service airdrop, I can share some pictures between these 2 devices in a few seconds. Whereas if I have an iPhone and a laptop that use Microsoft software, it's almost impossible to share my picture or to connect my iPhone with my laptop. Except if I have a cable and download a special program that would allow the connection to share some files between my iPhone and laptop. Or I could send my files by email from my laptop to my

iPhone and after downloading it. However, it's too many steps where at the end the user will be convinced that every hardware that he will buy will need to come from Apple. When we enter to Apple it's like a jail because their devices work perfectly only with iOS and Apple assumes it, for example with the iWatch that works only with an iPhone (iWatch-Apple). In the end, Apple forces consumers to buy their products.

To reinforce more their CRM, Apple assists new users to use their products with their offer of omnichannel support with some tutors which allows the users to learn how to use their new devices perfectly. This support is very important because omnichannel engagement strategies manage to retain around 89% of their customers. (Tim 2018.)

Another strength of Apple, it's their devices are sustainable. If we buy an iPhone today, we can be sure we could use it for 4 years minimum and in the long term it doesn't lose its values. This sustainability is due to the OS that Apple offers with updates of iOS every year that bring new functionalities and new services. Furthermore, Apple controls their software and their application store which allows to perfectly synchronize the applications with any iPhone that automatically increases the experience of the users and will increase their loyalty. (iPhone.)

Apple knows that take care of the user is the most important thing, it's their priority instead to make profit. This is why they invest to implement their store all around the world, if the consumer has a problem with their product, he could go directly to these stores and Apple will find a solution directly with him. It's better than to call a customer service, talk with the employee to finally hear that we have to send our smartphones to verify the problem where we have to prepare the package, go to the post office, send it and wait a minimum of 10 days. Today, if a user has a problem with it device, he wants to find the solution as quickly and easiest as possible. With apple stores, we can bring our iPhone, an employee will find a solution with us directly and in 30 minutes we can be fixed. So much time saved. Apple doesn't only bring innovative products but they give to customers security and confidence that are the reasons why customers are so loyal to Apple. (Tim 2018.)

To build their marketing strategies in order to communicate their products and to sell, Apple uses the product concept. Apple promotes their product as the best product ever that we can find. They go even further and now communicate some of their products by using societal marketing concept. We can take example with their last commercial video to promote their iWatch series 6. In this video, Apple showcases what the iWatch was able to do such as: call anytime, measure our heart rate, follow the evolution of our sleep patterns. All these features can be used to improve our daily life and push us to take care of ourselves (Introducing Apple Watch Series 6 _ It already does that 2020). iWatch is a success, in 2019, 31 Million of iWatch were sold, more than the entire Swiss watch industry where 21,1 million were sold by these industries (Statt 2020).

Apple is getting stronger because they adapt to the market, a few years ago Samsung and Apple were the best-known brand smartphones ever. After, Chinese brand smartphones came to the market where they sold smartphones with the same functionalities at a cheaper price. Most of the iPhones are very expensive, since 2016, Apple has been selling a new range of iPhone, the iPhone SE where its biggest strength it's its quality price. A cheap iPhone with very good power, good autonomy, good camera, and the operating ecosystem iOS with all the updates for at least 4 years. (iPhone.)

Apple is building a universe around their products, their software and services. When we buy a new iPhone, we have a lot of applications already downloaded from Apple such as: the mail, the picture, the calendar, the plan and now they go further by offering new services such as: Apple Music, Apple TV+, Apple Arcade, Apple Fitness +, Apple News+ (Apple one). By offering these services, they want to convince the users that they don't need to go away because Apple provides everything already.

Everybody knows Apple and most people who own their products approve and are happy. Apple listens customers and is focused on giving them the best experience and not to make the most profit. Apple knows if the user is happy, he will stay and won't go to see other competitors. They focus on being close to the customer and the biggest strength of Apple is they focus to not

propose only the best product but the best experience and that's why their consumers are so loyal to them and that they succeed to attracting new one.

4.2 Huawei between innovation and issues

Huawei is a company that is able to bring the best features on their smartphones. They prove it especially with their range Huawei Mate and recently with the commercialization of their last flagship Huawei mate 40 pro+. In this smartphone, Huawei succeeded to bring one of the best power, the best camera and the best autonomy that we can find in the market with some very good features such as facial recognition in 3D or the possibility to unlock our smartphone by fingerprint under the screen. (Introducing Huawei Mate 40 Series 2020.)

Huawei offers us the best product because they believe it's the best compared to other competitors. During some keynotes where they presented their smartphones, at least one time, they compared their smartphones to the last flagship of Apple and Samsung in order to pass this message that their smartphones are the best (Huawei P30 Series 2019). To communicate their products in order to attract new customers, Huawei uses the product concept to promote their smartphones as the best in the market. Furthermore, to influence customers to buy their products, they select some ambassadors where some are athletes such as Antoine Griezmann that is a footballer or Vasek Pospisil that is a tennis player (Griezmann 2019; Pospisil 2019).

Huawei is a mixing between Samsung and Apple, Samsung for the Hardware and Apple for the software. Huawei is able to create new innovative smartphones such as their foldable smartphone with Huawei Mate X. On the other side, Huawei took the example of Apple for their software. Huawei is in the laptop market too with their range Huawei MateBook. We saw that Apple has created a perfect connectivity between their smartphone and laptop products. Huawei tries to do the same with the functionality "Huawei share" which offers a perfect connectivity between a smartphone Huawei that is more recent than the Huawei P20 and a laptop Huawei (Huawei Share). Huawei wants to create a universe around their products like Apple did in order to build and reinforce their CRM. Finally, it worked because Huawei succeeded in the market

and has been the world leading seller of smartphones in the second quarter of 2020. (Share of smartphone unit sales to end users by vendor from the 1st quarter of 2016 to the 4th of 2020 2021.)

However, as we saw in the theoretical framework, Huawei met some issues that have had huge consequences in their business. In terms of image and in terms of experience for the user. Since March 2020, a recent Huawei smartphone can't use the services of Google anymore, especially Play Store that allow to download applications (Kelion 2020). To remedy this issue, Huawei has created its own service to download applications that is AppGallery (Huawei AppGallery). However, for the moment, AppGallery doesn't provide so many applications like the Play Store or App Store. From Statista, it can be seen that in September 2020, AppGallery counted 96000 applications whereas at this time, Play Store and App Store owned respectively 2.100.00 and 1.800.00 applications (Numbers of apps available in leading app stores 2020 2021). To remedy this, Huawei brought a solution with Petal Search where it's possible to have access to miss applications from AppGallery by the Web version of the desired application such as YouTube or Twitter for example (Petal Search). However, as a user it's not practical because by the web we can have access to less mobile features than an application and it can disturb us from our experience with the smartphone where at the end discourages us to continue with Huawei.

Huawei met another issue in 2020, an article from Washington Post affirmed that Huawei would have tested a facial recognition software in order to identify Uighur people to create an "Uighur alarm" which would contribute to help fuel China's crackdown on the mostly Muslim minority group (Harwell & Dou 2020). For Huawei, it's dramatic for their image because this issue shows that they are not an ethical company. On December 10, 2020, Antoine Griezmann published in his Instagram the end of the collaboration between him and Huawei (Griezmann 2020).

2020 was a difficult year for Huawei even if they reached this year their position number 1 in the top seller of smartphones, these different issues that they met especially with USA had a huge impact on their business. During the third quarter in 2020, Samsung took back its place of leadership in the smartphone market. During the fourth quarter in 2020, the market share of

Huawei was 8,4% whereas the market share of Huawei in the fourth quarter in 2019 was 15,2%. That represents a decrease of -42,4% for Huawei. (Smartphone market share 2021.)

Furthermore, on 16 November 2020, Honor separated from Huawei and became a separate smartphone company. Which will allow Honor to use Google services, and to establish its own supply chain with components that come from the USA and offer new smartphones. For Huawei, unfortunately, it's bad news because they are going to lose more customers and their market share will decrease more. (Li 2020.)

It's sure, it's not good for the future, however if Huawei survive to this crisis and find enough resources to build a strong OS, a good service for applications, rebuild a good image and continue to offer smartphones with the best technology, there might be a chance that in few years, Huawei could become leader of the smartphone market again. Because they will have their own OS which would be HarmonyOS and it could give them a huge advantage for the connectivity between their devices like Apple does. Furthermore, for the foldable smartphone market if we talk about only the product, Huawei is a huge threat for Samsung, in terms of hardware. For me, Huawei offers even a better foldable smartphone than Samsung and if Huawei has their own OS, their own services, all applications could adapt easier on this kind of smartphone than other brands and give them an advantage to increase the experience of the user. So, Huawei has to resist and bounce back from these issues that they met but the road will be long and difficult especially to regain the trust of the customers.

4.3 Samsung, a strategy of innovation

Since 2012, Samsung mobile has been the top leader in the smartphone market, they succeeded to attract new customers and keep most of them by their different products, from the most expensive to the cheapest. For a few years, Samsung listen more and more the consumers. In 2020, Samsung commercialized a new range in their catalogue, the Galaxy S20 FE, FE meaning Fan Edition. Samsung created this product considering the expectations, the

feedback, the request from users such as: A very good battery life, good screen, powerful smartphone, good cameras, good quality price. (Galaxy S.)

What is the most impressive with Samsung is that they are still in the top leader of smartphones despite the hard competition and the troubles that they have encountered. The biggest issue that could have been very dramatic for Samsung is when they commercialized their new flagship in August 2016 the Samsung Galaxy Note 7. At the first look, the Samsung Galaxy Note 7 had everything to be the best smartphone of the year. However, some users and journalists met some issues with the battery where the battery could explode without particular reasons. Samsung Mobile had to recall all the smartphones and stopped the production. It could have been the end of an era for Samsung but they used this issue in order to promote their new laboratory of security for their smartphones and succeeded to maintain the confidence between them and the customer. (Samsung recalls note 7 flagship over explosive batteries 2016.)

Another trouble which disturbed Samsung is in 2020 where Samsung had an important issue with their processors. As you know, depending on the countries, Samsung provides different variants of smartphones. For a few years, the flagships of Samsung that are commercialized in Europe use the home processor of Samsung which is Exynos, while in USA, the flagships use the processor snapdragon from Qualcomm. In 2020, when Samsung sold their Samsung Galaxy S20, according to some tests, there was an important gap of power and autonomy between the Samsung Galaxy S20+ with the snapdragon 865 and Samsung Galaxy S20 with the Exynos 990. According to a performance test, the Snapdragon 865 would have been 20% faster than the Exynos 990. It was an issue for Samsung especially in Europe because European users were not happy and there was a misunderstanding. (Samsung Galaxy s20 Ultra – Exynos vs Snapdragon 2020.)

Hopefully, Samsung took this issue very seriously and in January 2021, Samsung presented their new Exynos 2100 for their new latest flagships Samsung Galaxy S21 to reduce this gap between their processors and processors from Qualcomm. For the Galaxy S21, the Snapdragon 888 would be still more powerful than the Exynos. However, Samsung would have succeeded to reduce the gap consequently between them and Qualcomm because according to a

performance test, the Snapdragon 888 would be 6% better than the exynos. (Galaxy S21 Ultra – Exynos vs Snapdragon 2021.)

Despite of all these issues, Samsung still remains the number one, it seems that they have a very strong CRM and they succeed to attract new customers by their products and their communications. The communication of Samsung is very interesting, to make their strategy they use the product concept. When Samsung commercialized their flagship Samsung Galaxy S21, they posted on YouTube a video where some popular youtubers that test smartphones said some good opinions about the last flagship from Samsung (Galaxy S21: Expert Review Highlights Samsung 2021). This kind of communication is smart because there are a lot of other smartphones in the market that at the end we don't know which one to choose. So, we watch some videos where people test smartphones in order to make our choice and Samsung uses it in their way. Furthermore, to improve their image, they selected some ambassadors such as: BTS, Milly Bobby Brown, Khalid. These ambassadors are most of the time known by young people, so, by their communication, it would seem that Samsung wants to attract young customers. Then, they build their communication of what magical thing a user can do with their smartphones. When they promoted their Samsung Galaxy S20 Ultra, their principal argument was concentrated on the fact that it could zoom until x100. (Samsung Mobile.)

As we saw, Samsung tries to innovate their products to be the most impressive and to attract new consumers. Most of the time, they bring some innovations in their latest flagships but sometimes Samsung uses their mid-range to experiment some of their innovations. For example with the Samsung Galaxy A80 that was the first triple rotating camera in the market. (Samsung Galaxy A80 – rotating camera Hands-on Review! 2019.)

Now, Samsung is enter into a new era and wants to write the future of the smartphone with their range Galaxy Z. In February 2019 at the mobile world congress in Barcelona, Samsung presented their first foldable smartphone with the Galaxy Z Fold (Samsung Galaxy Fold FULL launch event (Unpacking event) 2019). 1 year later, they commercialized the Galaxy Z Fold 2 with some improvements such as: bigger cover screen, better main screen, better solidity to folding and unfolding which was reproach to the Samsung Galaxy Z Fold 1 for its solidity from

consumers and journalists (Gartenberg 2019). Samsung is set in a new market and seems to control this new technology to make a better fold smartphone. Samsung believes in a future of fold smartphones, it's the first company that is so invested in this kind of smartphones. Furthermore, they want to go further by inventing a new product, at this moment they are working on a rollable smartphone, it's a new technology that allows to enlarge a smartphone on the sides without the need to fold it (Lee 2021).

Samsung seems to think that year after year, it will become more ordinary to own a fold smartphone and they want to be the first in this market to attract new consumers and stay number 1 in the smartphone market. Samsung doesn't focus only on innovation, they know that the experience that the consumer has with its smartphone is very important because if they are satisfied they will come back. Samsung made a lot of improvements on their software, beginning with their new interface One UI introduced in 2019 with a very intuitive navigation, pleasing to use and practical for large screens thanks to the interaction elements in order to use with one hand. With One UI, Samsung introduced Bixby Routines, a virtual assistant that is used to determine what action our smartphone can do when certain conditions are met (What is Bixby Routines?). For example, with Bixby routine I can program when I connect my headphones with my Samsung smartphone, the music starts automatically. Furthermore, to strengthen their CRM, Samsung promises to update some of their smartphones for 3 years from their commercialization year (Burns 2020).

To go further with the experience of the consumer, with Samsung Dex, Samsung offers to a user the possibility to transform their smartphone into a pc, and even a game console with Xbox Game Pass that is a cloud-based streaming service from Microsoft which works like Netflix. We pay a monthly subscription and we can have access to a catalogue of video games where we can play without the need to download them. So, with a smartphone from Samsung depending of the model, we can have an Xbox Game Pass to have access to different video games and with Samsung Dex it allows to play some video games from our pc without console games. (Play Xbox game pass on your Galaxy phone 2020.)

The partnership of Samsung and Microsoft goes further because they work more and more together in order to offer us a connection between a laptop that uses Microsoft and a smartphone Samsung like Apple and Huawei does with their products (Mehdi 2020). Samsung doesn't forget that the software is as important as the hardware because at the end, if the consumer is satisfied, he will stay at Samsung. By improving their software, making new innovative smartphones, creating new strategies of communications, all these things are done in order to stay number 1 as long as possible.

4.4 What to expect in the future for these companies?

For the future, these companies will try to make new smartphones with new technologies and new innovations in order to make the best smartphone, they will try to go always further. For example with the design, the challenge for Samsung and Huawei will be to make disappear the camera for selfie under the screen and for Apple make disappear the notch of the iPhone in order to offer a smartphone with a full screen.

For the software, companies will try to give us always new functionalities, and to give us the best connectivity between our smartphones and other devices such as: laptop, headphones true wireless, connected watch in order to give us the best experience that we can have with our smartphone and our different devices.

However, companies won't focus only on creating and commercializing smartphones, they will focus on building an image on their companies with more values and ethics. Now, companies want to become more sustainable and don't hesitate to take some decisions that could be against the consumer in order to fight climate change. In 2020, when Apple commercialized their iPhone 12, they decided to take off chargers from their packaging in order to preserve the environment (A planet-size plan 2020). In January 2021, Samsung Mobile did the same with their Samsung Galaxy S21 (Samsung S21 Ultra 5G 2021). We all know that to manufacture a smartphone, it pollutes the planet, furthermore we are in over production of smartphones. To remind this, from 2030, Apple wants to manufacture entirely their products by using clean

energy with recycled materials. It's a supplementary argument for the consumer to stay with Apple because they will think that by buying their products, there are no consequences on the planet and it reinforces the image of Apple and finally reinforces their CRM. (A planet-size plan 2020.)

For Apple, their objectives are to always offer new smartphones with new features, new functionalities in terms of software. In the following years, one of the biggest challenges of Apple will be to work on their design especially to reduce their notch and put their camera and face ID under the screen in order to offer the best design. Then, a new market will open in a few years, the market of foldable smartphones, Apple is working on it because recently they made some patents but according to some rumors, Apple would commercialize a foldable smartphone not before 2022. Then, of course Apple will continue to develop their software in order to give the best experience to the user and reinforce their CRM. (Ismail 2021.)

For Samsung, their objective is to be still the leader in the smartphone market. So, they will try to go further in their innovation in terms of hardware with their camera, design, screen and always improve their software and interface. Samsung will still work with Microsoft in order to improve the connectivity between their smartphones and laptop that use the OS windows. Then, upgrade their functionality "Samsung Dex" to connect in another way a smartphone Samsung with a computer to transform the computer into a smartphone or in a console game. In the end, in terms of connectivity between devices, Samsung will try to copy Apple to reinforce their CRM. For the moment, Samsung is almost alone in the foldable smartphones market. It could give Samsung a head start over companies for the future because they are going to master these technologies year after year, as well as the software. Furthermore, the demand will increase in the future and the more Samsung will master the manufacture of the foldable smartphone, the more Samsung could decrease the price and it will automatically attract new customers. In the future, we will change our way to use our smartphone, to work and we will search to be more productive with our smartphones, have a bigger screen can be a solution. So, the demand of foldable smartphone will increase and with the reasons that were quoted below, it could give Samsung a huge advantage to attract new one and keep them because the foldables

smartphones from Samsung will have become a reference in the market which will reinforce their place of leadership in the smartphone market.

For Huawei, it's more complicated because the company suffered from trade sanctions and now it will be more difficult to challenge Apple and Samsung's dominance. Furthermore, in 2021, Huawei would declare to their supplier about a 60% reduction in component orders this year, Huawei predict to commercialize 70 million of smartphones in 2021 against 189 million in 2020 (Huawei to cut smartphone production by over half in 2021: report 2021). However, if they want to continue in the smartphone market in Europe, with what happened, they will have to re-build their CRM, by firstly implementing their OS HarmonyOS in their Huawei smartphone and adding more applications in their service AppGallery in order to be more competitive compared to the play store and Appstore. Then, convincing the consumers that their new software is very good because it's sure, they could make the best product ever in terms of hardware, if the consumer doesn't have a good feeling with the software, it will go somewhere else. However, with what happened, it would seem difficult for Huawei to rebuild a good image especially with the issue of Uyghurs, so what would be the strategy of Huawei to retain and attract new consumers? 2021 will be determining for Huawei, the company will continue to create new products, innovation and develop their new ecosystem Harmony. If the sales are good, Huawei could be continuing to sell their products in Europe and year after year rebuild an image and try to become a serious threat again for Samsung for the place of leadership in the smartphone market. Otherwise, if in the future, the sales are not good in the market of Europe, Huawei could totally gather their sales in China.

5 DISCUSSION

In this chapter, we will see what defines the best smartphone and I will define according to my point of view the future of the smartphone market and what challenges companies could have to attract new customers and keep them.

5.1 The Best smartphone

After analyzing the different hardware, software of Huawei, Samsung, Apple, we can ask what the best smartphone is? Of course, the best smartphone depends of the users and their need, some users will desire a smartphone with strong power and good autonomy, another will want the best photophone. When a smartphone brand commercializes their flagship, they always try to build the perfect smartphone. Now, it's very difficult to choose a flagship smartphone because they offer almost the same features such as: strong autonomy, very good power, great screen, great camera, great interface. So, how do companies stand out from the rest and convince the consumers that their smartphone is the best for them?

When we see the latest commercial videos of flagships of different brands, there is particularly one feature that the marketing insists on a smartphone, the camera. It's become a criteria important for users because when we travel we want to take good pictures and with social media we want to post beautiful pictures. It's one of features where companies can make the difference and companies know that. At Apple and Samsung there are many more engineers than Nikon. Basically, a smartphone camera has 3 components such as: optics part, multiple cameras and a computer image processing which recovers the image from the sensor and develops it using an algorithm. Most companies own the same components for their camera which most of the time come from Sony and Samsung but for the computer image processing, it's here where companies can stand out from the rest because their vision about the best camera will be different especially with their algorithm. (Apple, Samsung, Xiaomi: le marketing d'abord, la qualité photo après? Conseils & Avis Ft. @Nowtech 2021.)

Also, design and screen became a criteria important where companies can make the difference, there is hard work from smartphone brands to reduce even make disappear the camera for selfie. A lot of innovation appeared such as the One Plus 7 pro in 2019 with a pop camera that is a camera that doesn't come out until the user chooses for them to come out and that allows it to offer a screen without notch or a bubble (OnePlus 7 pro 2019). However, the consumer seems to accept more a bubble or notch in their screen, but manufacturers work very hard to soon offer a smartphone where the camera could be integrated under the screen in order to offer the best smartphone in terms of design.

All this work is made to offer the best smartphone in order to attract as many customers as possible. Beginning with the hardware especially the design, the screen, and the performance of the camera of the smartphone which is emphasized by the marketing from companies are important to attract at first look new customers. When Samsung promoted their Samsung Galaxy S20, their main argument was that it could zoom x100, it's impressive. However, I think companies have to be careful to not fall into the trap of gadgets especially for the camera. When we see that companies promote their smartphone by put their zoom x100 in the spotlight, it's sure it's impressive but to be honest, it doesn't have a utility. As a user, I will not almost use this feature despite its look really cool. I deeply think that what makes a consumer loyal to a smartphone brand is for the OS and the connectivity that a smartphone can offer with other devices.

Today, companies won't only think to make a smartphone, they will go further and will make a software for the smartphone the most simple and easiest as possible, then create a perfect connectivity between their devices and their smartphones. The smartphone is the principal key, we use it every day and it can have an influence on our future purchases of other devices and vice versa. If a consumer has a smartphone from Huawei, naturally it will buy a laptop from Huawei because of their functionality "Huawei Share" compatible only with the Huawei smartphones. If I have a MacBook, but I want to take the Samsung Galaxy S21, maybe I will be satisfied with the smartphone, but only with the smartphone, with the connectivity between my Samsung Galaxy S21 and my MacBook, I will not be and I will be frustrated for several reasons: If I want to transfer a file from my MacBook to the Samsung Galaxy S21, I will have to upload a

special application that allows the connection between these 2 devices, then use a cable, select my files that I want to transfer from my MacBook to my Samsung Galaxy S21, and wait. Whereas, if I get an iPhone, the transfer would be so simple and will take only few seconds thanks to the application airdrop that works only with the Apple devices.

The connectivity between different devices is becoming more and more important, especially since the commercialization of the headphones true wireless, smartwatch. As we move forward, we are going into a world filled with connectivity. The experience from the OS, interface and the connectivity that offer the brand between their smartphones and their different devices will become more and more important because it will build the CRM. If the user wants to use the potential maximum of its devices, he won't have the choice to buy the different products from the same brand. Apple did this very well, if we want to have the best experience, it's Apple or nothing because the ecosystem of Apple makes it work only by using iOS. If I have an iPhone, the connection between my iPhone, AirPods and MacBook will be magic because it won't need manipulation from my side. If I listen to music from my MacBook and someone calls me on my iPhone, my AirPods will switch automatically on my iPhone and once the call ends, it will switch automatically on my MacBook. Whereas if I had a smartphone that doesn't use iOS, it would be impossible to have this connectivity. As we saw, the ecosystem of Apple is their biggest strength, if all my products come from Apple, my experience as a user will be so pleasant everyday. However, this experience has a price, Apple offers this experience with the only condition to use products that come from them, it's Apple or nothing. Whereas if I take a smartphone that uses the OS android and I have a laptop that uses the OS Microsoft, it gives me a wider range of choices of smartphone and laptop because it will be possible to connect these 2 devices together even if the laptop and smartphone is not the same brand.

If the company succeeds to offer the best experience to users thanks to their software and connectivity, it will gain the loyalty of the customer. That's why since 2019, Samsung is doing a partnership with Microsoft in order to build a connectivity between their smartphones and pc, laptop that use the OS Microsoft (Mehdi 2020). Or that Apple invest so much money in their OS and services because they understood that the best smartphone is a smartphone that responds perfectly to the user's needs.

5.2 The Future of the smartphone market

Today, we can ask what we will find in the smartphone market in 10 years, when we look at the last smartphones what they are able to do it's so unbelievable. For example, with the camera, some smartphones are able to zoom x5 and x10 by optical zoom and until x100 by digital zoom such as the Samsung Galaxy s20 Ultra. 5 years ago it was almost impossible to think that a smartphone could be able to zoom x100, only a big camera was able to do this kind of thing. Every year, companies go further in their innovations, whether it be Apple, Samsung, Huawei, Vivo, Oppo, Xiaomi, One Plus.

Now, more and more companies invest a lot in development research, make patents or present to journalists some of their prototypes of foldable and enrollable smartphones. As we saw it, Samsung is already involved in the market of foldable smartphones and doesn't have almost any competitors for the moment. Actually, this kind of smartphone is made for consumers who desire something new, a new experience, another way to use it smartphone, that love the technology, desire a bigger screen and have the money because actually it costs minimum 1500\$ until 2000\$ (Galaxy Fold). Today, it's very uncommon to see someone with this kind of smartphone but maybe in 10 years it will be normal for several reasons such as: the price will decrease to extend to the most customers and maybe we will use our smartphone differently. Even if today, we use our smartphone to work, a foldable or enrollable smartphone could give us more flexibility or increase our way to work faster for example have a better visibility of a table on excel or watch a video and answer to an email at the same time with a better visibility than a standard smartphone. There are multiple possibilities that a foldable can offer to us.

We can think that consumers desire a bigger smartphone with a bigger screen and that's why companies work to make a smartphone that can fold or roll. It's understandable because every day we use our smartphone to go on social media, read articles, watch movies and nothing is better than a big screen. In the keynote of Apple in 2020, Apple presented their iPhone 12 mini, its particularity was its small screen of 5,7 inch (iPhone). According to a supply chain analyst William Yang, Apple would stop manufacturing the iPhone 12 mini in the second quarter 2021 because it would not sell enough compared to other models. Furthermore, according to him

Apple would increase the manufacturing of the iPhone 11 because the demand is increasing due to its cheaper price. So, we can expect that the consumers are more interested by a big screen than a small screen. It's a reality that we use more and more our smartphones, for our free time or to work, sometimes our smartphone replaces our computer. So, manufacturers will work to develop smartphones that can extend in order to earn in productivity and comfort. (Peterson 2021.)

Manufacturers will try to produce smartphones that are more innovative and different to attract new consumers, Samsung began already with their range Galaxy Z, as Huawei and Microsoft too. Microsoft that was not anymore in the smartphone market came back with their Surface Duo, a smartphone dual screen where the target of Microsoft is for workers who want to increase their productivity with their smartphone (Surface Duo).

But I think in the future, most consumers will prefer to buy a smartphone with a standard design rather than a foldable or enrollable smartphone. The foldable smartphone is a great innovation and when the technology will be mastered and that the programmers will adapt their applications to these smartphones, it will be awesome. I'm passionate about technology so for me it's sure in the future I would like to buy this kind of product. However, for most consumers who want just a smartphone for a normal use, they won't be attracted by a foldable or enrollable smartphone. They will see the possibility to extend their screen more like a gadget than useful. Some consumers would think if they want a bigger screen they should take a tablet. When we have a foldable smartphone, it changes our way of using a smartphone because we're not used to fold and unfold. Furthermore, the consumer can be afraid to break the smartphone by folding and unfolding every time or by one fall break the smartphone and loss 2000\$. For the moment, this kind of product is more for the B2B market, for users that love the technology, use their smartphone every time everywhere and need to read reports, check their emails and at the same time take notes in only 1 device. The aim of this product is to earn in productivity and be efficient in our work, also, it's for users who desire to carry out a tablet in their pocket. However, in the future, the enrollable smartphone could have more success than the foldable smartphone because at first look the enrollable would look like a standard smartphone and extend the screen will be only a plus. Whereas if we buy a foldable smartphone, the design and the fact that it is

very expensive makes us understand that we have to unfold the smartphone to enjoy completely the technology. It changes our way to use a smartphone and in the end it can be frustrating because the design forces us to do something that usually we don't need and because of that we could be disappointed by the experience and come back to a standard design.

So, in 10 years, in terms of hardware we will find thinner smartphones, with an incredible progress in camera, in screen, design, autonomy and a new range of smartphone which we could fold and enroll with a technology completely mastered. Maybe, manufacturers will create a new way to use our smartphone easier, with more productivity. For the software, I think the smartphone will be able to connect with everything, beginning by a perfect connectivity with our laptop. Then, soon, our smartphone could be our key for our car and house, our switch for the light, our credit card. So, in terms of marketing, instead to promote their products by using a product concept, they will use a societal concept because the smartphone will be made to make our life easier. Today these features already exist but in the future it will be more generalized with a lot of possibilities to use our smartphone in order to make our life easier and all companies, whatever the sector, will try to match their products in terms of connectivity with smartphones.

Companies will develop more and more their software to improve the experience of the consumer in order to earn it loyalty and make sure he will come back. In the fourth semester 2020 Apple became the first seller of smartphones by selling 90,1 millions of iPhone in 3 months which represents 23,1% of the market share (Khanna 2021). If we compare the last flagship from Apple to other brands, the iPhone 12 pro max doesn't have an optical zoom x5 and x10, doesn't have a refresh rate neither 90hz or 120hz compared to the Galaxy s20 ultra or the Huawei Mate 40. As we saw, the iPhones don't have the best hardware but Apple sold the most smartphones in the last semester of 2020 thanks to their software and ecosystem because the consumer knows exactly that if it goes to Apple, in the long term he will be satisfied. Apple succeeded to build a strong CRM and that's one of the reasons why Apple finished first in the last semester.

In the future, we could not consider just the smartphone anymore. The software, the connection between the different devices and smartphone will be important to influence the customer to choose it smartphone. Even if in terms of hardware, the smartphone doesn't offer the best, it won't be a problem for the consumer because if he loves the software, the connectivity between the smartphone with other devices that come from the same company as the smartphone, he won't go away and companies know this. In 2021, Samsung is going to come back to the laptop market in Europe with their range Galaxy Book whereas they had left the laptop market in Europe for few years ago (Galaxy Unpacked April 2021: Official Replay Samsung 2021). Samsung did this comeback because they know the connectivity between the smartphone and laptop will become more and more important for the user and will be a plus for fortifying their CRM or attracting new customers. During an introduction video to present the Galaxy Book Pro 360, Samsung specially pointed out the fact that the Galaxy Book 360 will connect perfectly with any devices from Samsung and will use the same application that a Samsung device to give the best experience of connectivity to the user (Galaxy Book Pro, Pro 360: Official Introduction Film 2021). What Samsung does, Apple has done it for a long time now and more and more companies will follow the way that Apple made. In the future, the smartphone market will be so hard that companies won't have the choice to offer other devices which merge perfectly with their smartphone to attract new customers and keep them. Because if the consumer feels good with it smartphone and devices that come from the same company, he will have a total confidence in the branch and will stay loyal.

6 CONCLUSION

This thesis was aimed at exploring the smartphone market. This research focused on: the strategy of marketing that companies use to attract new customers, the way they build their CRM, the different innovations in the smartphone market, software of smartphones and describing the future of the smartphone market. To address these topics, a research-based approach was used and to understand the smartphone market, I chose to analyze the software, hardware, innovations, marketing, image of Samsung, Huawei and Apple. Information about companies, products came from their own website, their keynotes, their commercialized videos, their social media and articles from journalists.

According to the outcome of the research, it is found that Samsung invest on their foldable smartphone to be still the leader. They believe that they will have more and more demand in the future. Beside their new range of foldable smartphone, Samsung will continue to bring the best technology into their flagship with standard design and will always improve their software and will develop their connectivity to improve the experience of the user and keep him. In terms of connectivity, Samsung will go further with Microsoft and in a few years, they could offer us an ecosystem where a device from Samsung could match perfectly with a laptop or pc that uses Microsoft like Apple did with their devices.

To attract new consumers and especially keep them, Apple has invested a lot in their OS and services. Their ecosystem allows different devices to match perfectly with others which give the best experience to the user because all devices connect between each other like magic. Apple is a brand where users trust in them and I think when we try a product from Apple, thanks to their OS, their innovation such as face ID, their performance of camera, their connectivity with their different devices, there is 90% of chance that we stay with Apple. Furthermore, Apple offers very good products in terms of hardware and tries to attract new consumers especially by offering iPhones from the cheapest to the most expensive and this is why their CRM is so strong.

Before trade sanctions the strategy of Huawei was to offer the most innovative smartphone with the best features in order to be the leader of the smartphone market. Now it seems almost impossible for Huawei to consider to be the leader of the smartphone market, especially when we see their last quarter in 2020 where their sales decrease from the third quarter of 2020 to the fourth, falling from 14,7% to 8,4% in 2021 (Huawei's share of global smartphone shipments 2012-2020, by quarter 2021). Despite the commercialization of their last excellent flagship the Huawei Mate 40 pro + that is considered as one of the best smartphones in the smartphone market (Smartphone reviews 2021). Huawei is a good example of why the image of a company and the software is so important for the consumer because despite a company offer the best smartphone, if it has a bad image and doesn't have good software, it will retract the consumers.

That's why the software is so important in a smartphone. I will go further with Apple, Apple invests a lot in their software because software means CRM. Users will use their smartphones every day and we want to use our smartphone easiest and fastest as possible. All other products that Apple sell has the same OS as the iPhone, so if I have a MacBook I will surely choose an iPhone in order to have the best experience. Apple changed their economic model, the product is still important but services take more and more space, now in an iPhone we have pre-applications download from Apple such as Apple tv + for series, Apple News for news, Apple fitness for sport, Apple pay for our credit card, iMusic, iMessage, icloud, iNote. When we test Apple, it's difficult to go away because Apple brings almost every service, so much ease between our different devices that in the end if we want to buy a new product, we will buy from Apple and not from another. That's why the software in a smartphone is so important.

In the future, I think companies will develop more their OS with more functionalities, more possibilities and create a connectivity between smartphones and their own and other devices in order to reinforce their CRM and make sure the customer will stay. In the smartphone market, we will find thinner smartphones, more powerful, with more autonomy and with more performance in terms of camera. The technology of foldable and enrollable smartphones will be mastered and there will be more demand for this kind of smartphone firstly in business to business because our way to work will change and will be looking more for productivity. Then, in business to customer for users that desire to have a bigger screen in order to watch video, read

articles, that want the best of the best and see a real purpose to fold and unfold their smartphone. If there are more demands for this kind of product, programmers will work to offer their applications that can adapt to the large screen of the foldable smartphone. However, most consumers would desire more a smartphone with a standard design because it will be less expensive, it will own even the best technology and for some consumers a standard screen of 6 inches will be enough and won't see the goal to have a bigger screen, otherwise they would take a tablet.

As the smartphone market will change, the strategy of communication will change too and companies will use more and more societal concept instead of product concept because smartphones might replace our ID, key car, credit card, be our sports teacher, switch. All these things that we could have access to with our smartphone will make our life easier. What is sure, it's in the future we will have a plenty of choices of smartphones with a lot of innovation and great performance in terms of hardware, software and connectivity. The most challenging thing for a brand smartphone will be to offer the best hardware in order to attract new customers and to be still competitive, then, give the best software with the best connectivity between the smartphone and different devices in order to give the best experience to the user to keep them.

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