

How will the future of smartphone technological developments affect the global smartphone market share?



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Apple

Smartphones are an ever-growing industry in today's society, and they are used by virtually everyone for day-to-day tasks. Ever since 1992, when the first smartphone was released that was called Simon Personal Communicator (SPC) by IBM, there have been major technological changes in the way we perceive a smartphone as well as seeing what features they have. A huge smartphone milestone in history, was the release of the iPhone on the 29th of June 2007 that reinvented the way smartphones were used as well as setting a benchmark for future phones to come. The first iPhone seemed really sophisticated then, but when compared to modern smartphone specifications it seems barely comparable. The iPhone had the following specifications:

- 3.5" Screen Size
- 2MP Rear Camera
- TFT Display
- 412 MHz ARM 11 (CPU)
- Memory – 4/8/16GB
- RAM – 128MB

(Apple iPhone - Full phone specifications, 2021)

(GSMARENA, 2021)

This combination of specifications for a smartphone back then was revolutionary, mainly because of the fact that there was no baseline for what was considered a minimum requirement. Therefore, this is why the Apple iPhone was such a big moment in smartphone history. When the iPhone was first announced, there was speculation and predictions made by several people that thought the idea would fail and it would not have any chance. As a matter of fact, the CEO of Microsoft, back then, stated that the iPhone would have no chance of taking over the smartphone market. Steve Ballmer stated "There's no chance that the iPhone is going to get any significant market share. No chance. It is a \$500 subsidized item. They may make a lot of money. But if you actually take a look at the 1.3 billion phones that get sold, I will prefer to have our software in 60% or 70% or 80% of them, then I want to have 2% or 3%, which is what Apple might get." (Silver, 2018)

In 2021, this quote has never been more wrong, because in fact Apple now hold the global smartphone market share at 21% of the whole market, with 23% being held by the category of 'other' (Counterpoint, 2021).

'Other' is a category listed outside of the main smartphone companies globally. The main global smartphone companies that hold market shares are:

- Apple (American Company)
- Samsung (Korean Company)
- Xiaomi (Chinese Company)
- Oppo (Chinese Company)
- Vivo (Chinese Company)
- Huawei (includes Honor since it is a sub-brand) (Chinese Company)
- Realme (Chinese Company)
- Other

Apple had several milestones and obstacles to get to this point, but they are the most recognised smartphone brand in the world. The reason why they are so popular, is because the whole company gives off the image that attracts consumers with all their needs. Apple knows exactly how to market to their demographic and with this along with making high quality products that are unique from other smartphone brands, help pull customers into their fan-base. Once Apple has attracted a customer's attention, they let the advertising of the product do the rest. According to Soner Görpeli of Medium (2019), Apple seems to have created a metaphorical formula for being successful. Görpeli (2019) states, "Steve Jobs, when creating Apple has found a triple gold ratio and has applied this gold ratio to Apple. Apple's core philosophy and formula for success have combined technology with simplicity, simplicity, creativity and design, and found a successful formula."

This 'formula' that Görpeli talks about summarises down Steve Jobs' ideas into basic principles that helps understand why Apple is so successful. For example, one of the main principles is simplicity. Simplicity is an essential thing to consider when selling a new product because you want the consumer to see it as a product that is easy to use. Furthermore, having a simple product means that an 8-year-old child could use the device as well as a 70-year-old who use these devices in the same way. They can both start to use them very quickly without any difficulty. The 'simplicity principle' has been applied to all Apple products. There is no Apple product that can be complicated. This is because Apple's basic philosophy is simplicity. As well as being reflected in the product itself, it is also used in Apple's iOS

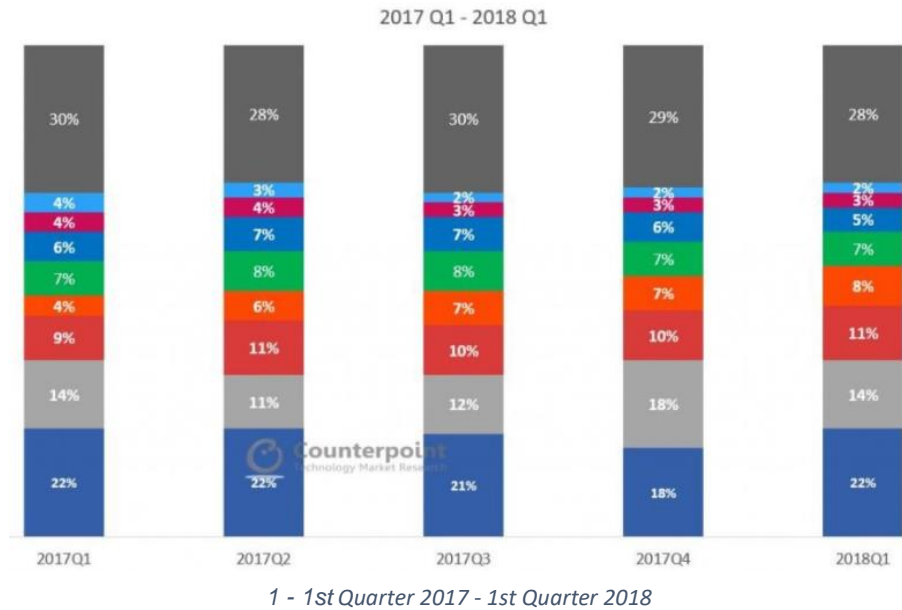
software. This can be proven because iOS is the easiest-to-use operating system, and all Apple devices are running the same software.

Over the last two decades, there has been a lot of technological developments for the smartphone world, with Apple sitting at the foundation. Since then, apart from the original iPhone they continuously improved their initial design, which is still going on to this day with the iPhone 12 Pro Max, which has led to the majority of the western world consuming Apple products. As well as Apple, there are other huge competitors such as Samsung and Huawei. Apple is the only one however to use iOS, which is their own proprietary operating system that they use on their phones. This is one of the main features that sets them aside from other companies which primarily use the open-source software Android which they optimise and reskin to each company's taste.

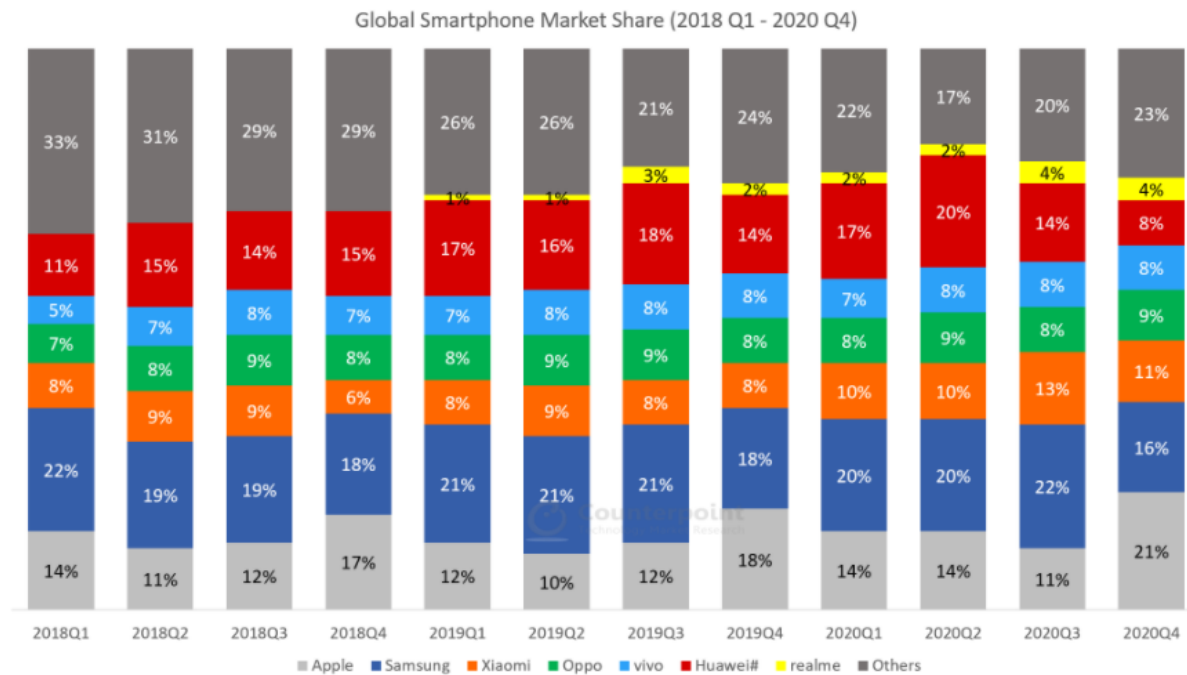
Over the years, Apple has changed a lot in terms of their product design and technology. It has set a lot of standards that smartphone companies try to replicate because their business ideas do so well. One primary example are AirPods. AirPods were primarily an Apple product that sold well globally and even became a 'trending' term at one point. The product got a lot of publicity as well as social media promotion that other companies such as Samsung came out with their own version 'Samsung Galaxy Buds'. The basis for the product itself was such a good idea that Apple soon made an upgraded version, the AirPods Pro. Soon again, companies such as Samsung soon did the same. Another example of where Apple has progressed a lot of technology is the hardware as well as software for their phones. Apple started out in 2007 with specifications that would seem worthless in today's day and age, however the iPhone 12 Pro Max which is the latest phone Apple have released has the best smartphone chipset in 2021 due to the optimisation of the software. The Apple A14 Bionic chipset created for their phones, while the M1 is the best for their MacBook's. Apple have progressed rapidly over the years with their software being one of their main points on why Apple products are so good. Along with gradually using better hardware, which Android smartphones do better you could argue, Apple's software optimisation to run with their hardware is one of the best things about their products themselves, which is why they are so smooth, fast, and easy to use.

Overall, from the history of Apple as a company we can see that as they have progressed and got more advanced through the years, they have gained more market share due to their increased customers.

For example, in the whole year between 2017 and 2018, this was the market share.



The latest market share is as follows:



From this we can see that throughout the past few years, Apple have gradually grown their share in the global market. We can hypothesise from this, that if Apple keep setting standards for new innovative smartphone technology and bring out accessories that consumers will want, Apple's market share will steadily grow.

There are some factors however that may prohibit this in the coming years however, with the eastern side of the world. This is because the eastern side of the world such as China, India and Japan primarily use their own smartphones located in their own region since Apple is an American company and has better support from the Western side of the world. Huawei for example is a huge competitor against Apple, and with the current Huawei - US ban, things might change for either side where Apple will dominate the market or Huawei will dominate the market with the news of their new operating system, HarmonyOS (Hellard, 2021). Huawei is currently working on a new operating system, outside of Android which is what they currently primarily use, to combat the ban between US and Huawei. This is relevant because the population of the Eastern side outnumbers the Western side, so if the US progresses this ban to a point where no American company can trade with China for example, then Huawei making their operating system exclusive to their region, the people in the Eastern side of the world such as China, Japan and India may potentially move to Huawei or another company that has part in the global market share. Therefore, this may decrease Apple's market share.

Samsung

Samsung is another global contender in the global market for smartphones, which is commonly known as a rival for Apple as they have competing operating systems (Cain, 2021). Samsung is a South Korean smartphone company that have released several smartphones just like Apple over the years. Underneath Apple, they are the second smartphone company to dominate the global market share over the Eastern and Western market share alike. Samsung is a different company than Apple, because unlike Apple, as well as smartphones they also make other devices and household appliances such as televisions, fridges and even washing machines. Samsung also even has a military sector that closely works with the Korean government. Overall, this demonstrates that the vision and goal for the company is completely different to Apple since they particularly function on a niche range of products/services when Samsung have a variety of manufacturing factors. Samsung's first phone was the original Samsung Galaxy that came out in 2009. The specifications for the phone were:

- Operating system - Android 1.5 "Cupcake" upgradeable to Android 1.6 "Donut"
- CPU ARM11 528 MHz + DSP 256 MHz
- 128 MB RAM
- 8 GB Storage
- 1500 mAH Battery

- 5 MP Rear Camera

(Samsung Galaxy (original), 2021)

(Wikipedia.org, 2021)

This was the specification list of Samsung's first ever phone, very similar to the specifications Apple had released on their first iPhone. Samsung went to lead on to make the first Samsung Galaxy S series first, which became a long line of phones with the latest being the Samsung Galaxy S21 Ultra. From then on, Samsung as released several series of phones such as the most notable "S" series, "A" series, and "M" series as well as other single releases such as the Samsung Galaxy FE, or the Galaxy Fold. Throughout the years, like Apple, each smartphones hardware and software have increased in performance with each generation being more powerful. One thing about Samsung is that unlike Apple which release a base model then a "Pro", "Max" or "Plus" version, each smartphone series line-up is made with a budget and price point in mind for the customer. For example, the "S" series phones are generally seen as the high-end flagship devices that cost the most, the "M" series is designed to deliver the best of the best specs for an average budget a consumer would be willing to spend. The "A" series was made as the low budget phones with not as much power as the high-end flagships, but good enough hardware for what the customer was willing to spend. This is one major difference between Apple and Samsung, because as I previously stated they each have their own unique vision and goals. The effect of their independent goals has made them two of the most global most recognised smartphone brands in the world.

Samsung is the largest producer of electronics around the world (Grush, 2019). The company had a chance to buy Android in 2004, however they passed on the opportunity. In 2004, the founders of Android were looking for money to keep their start-up going. The members flew to South Korea to meet with a team of Samsung's executives. The Android team showed them their plans for an OS (operating system) designed for mobile phones. (Vogelstein, 2004). The response from the team of Samsung executives following the presentation that Android gave was literal silence. According to the co-founder of Android, Andy Rubin, the Samsung team were in disbelief that the small start-up would be able to make this kind of operating system. Rubin added, "They laughed me out of the boardroom." From this passed opportunity, Samsung took a huge loss which could have revolutionised the way we see the operating system today. We can deduce that if Samsung took the

chance to work with Android, then they could have made huge advancements with their operating system, which could have potentially been optimised even more that it would rival Apple's iOS.

The secret to Samsung's success can be boiled down to the motto of the company. The 'mantra' of the company is "Understand what customers want and need". This is according to executive vice president of marketing of Samsung, Younghee Lee. This states that Samsung as a company try to appeal the customer and what they would like in a product. Implementing feedback from a set baseline of products allow them to improve on future designs to get what customers want to buy. Having this sort of mantra as a company, focusing on what consumers actually want and giving it to them while being a big enough company which has enough resources to do that, allows them to rival Apple. This gives us enough evidence to explain why Samsung are a big competitor when it comes to the global smartphone market share.

Over the last decade, Samsung have made several advancements in technology that they have managed to incorporate into their smartphones to keep up to date with Apple. Generally, Samsung's hardware has always been years ahead of Apple, with Apple years ahead of software optimisation. This has allowed Samsung to keep up with Apple. The two companies come off as polar opposites, however due to how each company operates, they are both huge successful companies that give their customers what they want. No other smartphone company has come close to beating the two companies at dominating the global smartphone market...or has there?

Huawei

As well as Samsung and Apple which are the main two competing smartphone companies that are dominating the smartphone market share, there is also another company that is slowly rising. Huawei are a Chinese smartphone manufacturer as well as a multinational technology company. They as a company have slowly surpassed other smartphone companies and progressed through several technological advancements to be recognised in both the Eastern and Western world recognise the brand name. They are also majorly known for their branch in networking and ensure secure and stable network operations.

In 2020 actually surpassed Apple in the global smartphone market share (Warwick, 2021). According to a research firm called Canalys, in the second quarter of 2020, Huawei

surpassed Samsung and Apple in number of devices sold which has been one of the first times in smartphone history someone has toppled Apple. In an article by Fox News they state, "Huawei's smartphone sales in the second quarter of 2020 were down 5 percent at 55.8 million, but that still surpassed Samsung, which shipped just 53.7 million, a 30 percent drop compared to the second quarter of 2019." From this, it demonstrates that Huawei are a rising company that have a goal in mind and know what to do to achieve that. Huawei also have a subsidiary called Honor when it comes to smartphones that are more or less focused on the younger consumer but also produce wearables and tablet computers. As a company Huawei actually overcame Samsung as the biggest smartphone vendor recently, which was a huge milestone. However, this is predicted that it would not last long because it was theorised due to the pandemic their sales rose (Byford, 2020).

However, even though that Huawei phones have a good set of hardware and good flagship phones, they have taken a huge loss due to the block of Google services. This means it is hard to sell to customers outside of China. Huawei do have a backup plan however which seems like they have been planning this for a while (more later on). With Huawei still going strong in China, this demonstrates that external pressure (from the US) is not posing a threat to its consumer businesses.

Huawei's HarmonyOS

HarmonyOS is a new operating system designed by Huawei to rival iOS and the GMS (Google Mobile Services) version of Android. HarmonyOS will have HMS, which is Huawei Mobile Services. This means that the upcoming smartphones that will launch with HarmonyOS will not ship with access to any Google services. Huawei have been working on this for a long while, since before the incident with the USA and China with them releasing applications such as AppGallery. HarmonyOS will essentially be a whole new ecosystem for smart devices. A quote from ITPro states, "It's an idea that Huawei says it has been working on for over a decade; an OS that can power a range of IoT tech from smartwatches, to tablets and even in-car systems. One customisable platform for practically any hardware that's internet-connected." (Hellard, 2021)

The reason why HarmonyOS is a big factor in the global market share, is because currently there has only been two rival operating systems for each set of smartphones each year. With Huawei now releasing their own new OS, this could be a major player and have a huge effect on the market share overall whether the operating system becomes huge or fails. This is important because it will be released to the eastern side of the world such as China and Japan, and since they make more of the population, it is bound to be more popular.

Therefore, this could be a huge turning point for Huawei in becoming more popular and having either an increase or decrease in the global market.

The Global Market Share

Smartphones that had more advanced computing capabilities and connectivity than regular mobile phones, came onto the consumer market in the late 90s, but only gained mainstream popularity with the introduction of Apple's iPhone in 2007. That said, the smartphone market officially came to be when Apple revolutionised the smartphone.

Since the late 90's, there has been a huge leap in progress in the design, hardware and software almost to the point where the very first phones would be incomparable to today's modern take on smartphones. This is because of the huge technological advancements we have gained in the last couple of decades. One of the most noticeable differences is the software and processing. From this, since the boom of technology and smartphones, the market share for each company has varied depending on their choices and take on making and producing smartphones. For example, Motorola was a popular mobile phone company and used to be a huge player with their handhelds; compared to modern day they are one of the least bought phones globally. According to Counterpoints statistic graph about the market share, Motorola is not even mentioned. This demonstrates that the only things that actually help companies to grow and thrive, is the way they move forward with their smartphone designs. This is why Apple is currently dominating the market since they were the first to "re-invent" the idea of a mobile phone. Throughout the years, each company goes their different way with creating new innovative ideas that progress rapidly throughout the years especially with how advanced the technology has progressed throughout the past couple decades.

The key foundation to why the global market share is majorly affected by technological advancements created by smartphone companies, is because consumers always want to try the 'next best thing'. This can be in the form of a brand-new innovative feature that is unique to a certain brand or even a brand-new phone that is faster and overall better than the last generation of smartphones, that consumers come flocking to try it out. This can be seen by how over the past decade how smartphone companies and their phones specifications have dramatically gotten much better. For example, a modern flagship phone, take the Samsung Galaxy S21 Ultra with the specifications including 12/16GB of RAM, 108MP camera,

5000maH battery as well as having one of the fastest smartphone processors today versus a 2008 flagship phone (the original iPhone).

The global market is a great source of information to find out what smartphone companies are doing the best. Usually, the market varies a little between the big three players (Samsung, Apple, and Huawei), however the slightly smaller players like Oppo and Realme tend to stay occupying about the same amount of market share. The three big players have always been the companies to introduce new innovative technology which has kept consumers coming after them, holding their position as the market dominators.

So How Do Technological Advancements Have an Impact on the Market Share?

In summary, from all this information we can understand that new innovative features attract consumers, but what are some examples of technology that is a technological advancement?

For example, screens over the years have improved drastically. Some of the very first phones were not even colour and in 2021 the Samsung Galaxy S21 Ultra packs a Dynamic AMOLED display with a 120Hz refresh rate! Another example is the different chipsets included in phones throughout the years. Modern day chipsets are thousands times more powerful than the first generation of phones. The most powerful chipset for iOS is the Apple A14 Bionic chip, whereas Android has the Qualcomm Snapdragon 888.

These are all various examples of different advancements in the technology we have progressed through, throughout the years. As well as progressing through different advancements, the global market share has also varied to different market players. We can see that in the past decade that when a smartphone manufacturer their market share can either increase, decrease depending on how consumers are attracted to buying it. One major example is Apple, as throughout the years more people have bought iPhones Apple's market share has increased due to them selling more units. A report from Android Authority (Walker, 2021) recently stated that teenagers in America prefer iPhone over Android and that iPhones are much more popular. Nearly nine in every 10 teenagers in the US use iPhones, according to a report by investment firm (Sandler, iMore).

The data comes from a semi-annual survey conducted in the US, polling 7,000 teens across 47 states with an average age of just over 16. 88% of these teens say that they own an iPhone, while a further 90% of the teenagers believe an iPhone will be their next smartphone. (Piper Sandler, n.d.)

Conclusion

In summary, from this we can derive that due to smartphone companies' advancements in technology that more units will be sold and therefore gain more market share. For this to happen however, the consumer-business relationship must be good. For example, taking Apple into consideration they have one of the biggest customer base in the world and people love their phones and consistently buy them without even considering the competition. This is due to Apple's huge customer loyalty and this allows them to consistently dominate the global market.

From this, we can also safely predict that in the future, smartphone advancements in technology will only get much better and more advanced which in turn could lead to big name companies (such as the big three) increasing or decreasing the amount of global market share they currently own.

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