

2018-2022 Netflix

Histogram and bar chart

2023. 03.06

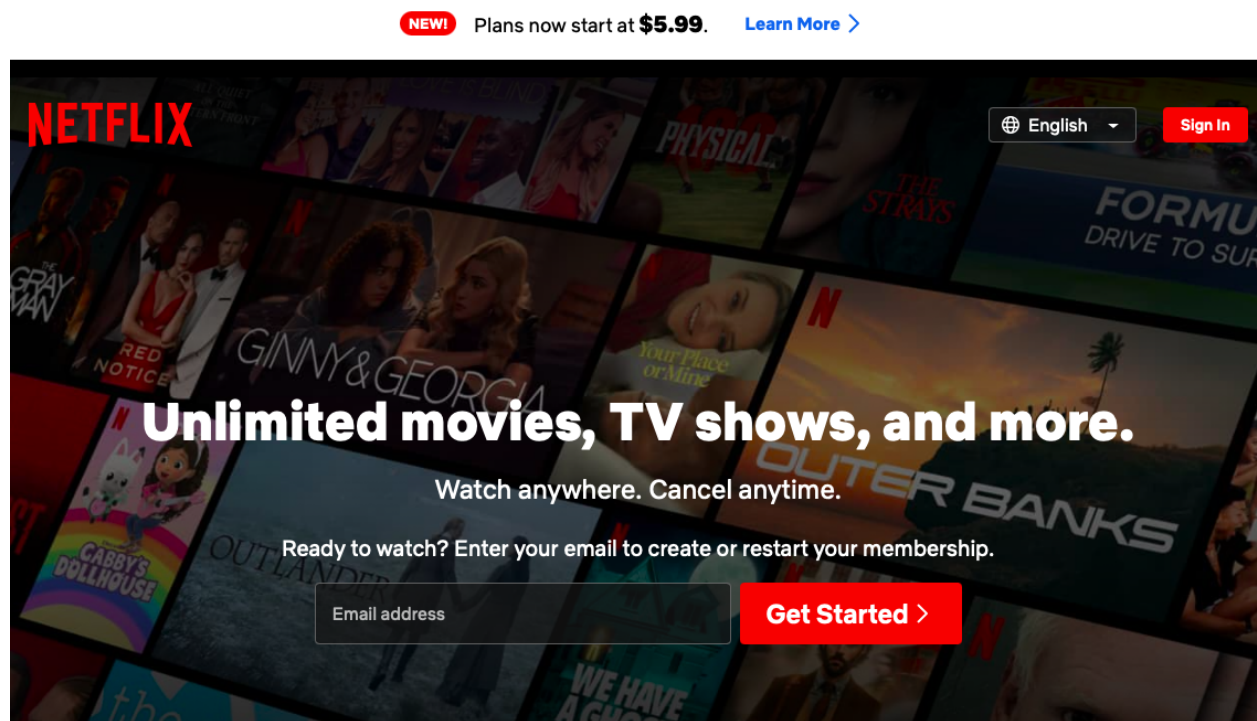


Image source: <https://www.netflix.com/ca/>

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Introduction

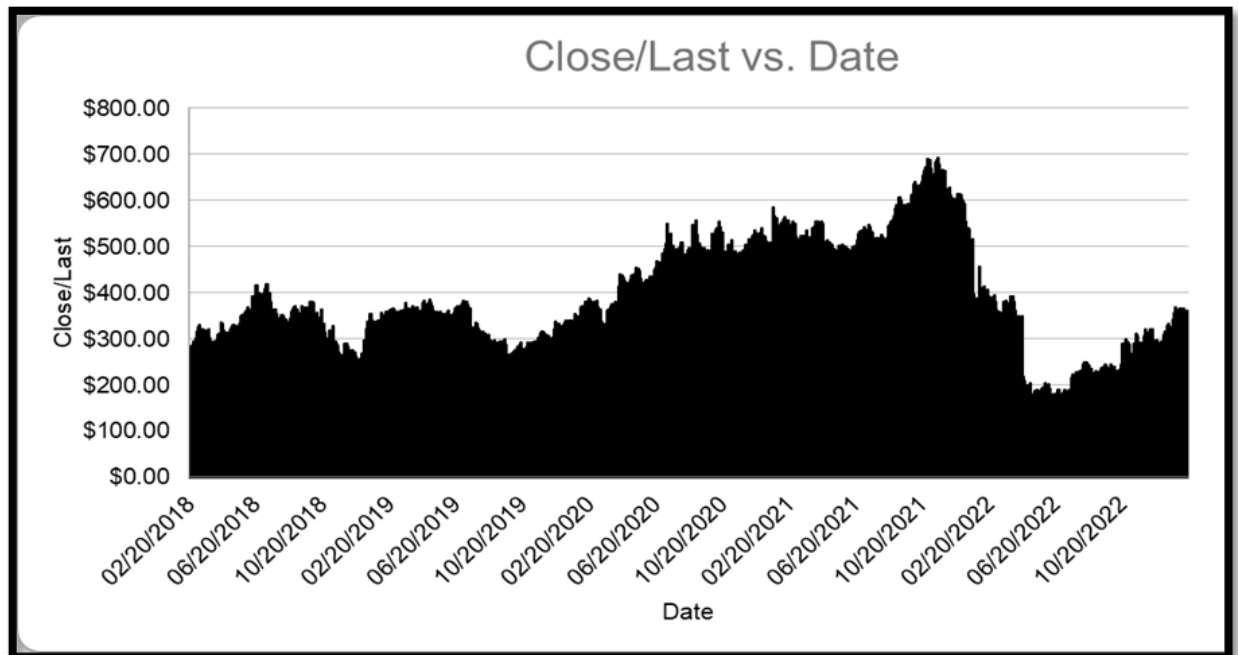
Netflix is a global media company. It started with DVD rentals services in 1998, then it went to online platforms in 2007. Netflix has led at every turn, which explains why it is a pioneer in the streaming service industry. While other streaming services just started providing shows from cinema, Netflix launched its first original series in 2012. The well maintained quality of original content is one of the reasons that Netflix has been so successful. In addition, Netflix has made progress in expanding overseas markets, it is available in streaming in more than 190 countries.



Image source: <https://www.pcmag.com/reviews/netflix>

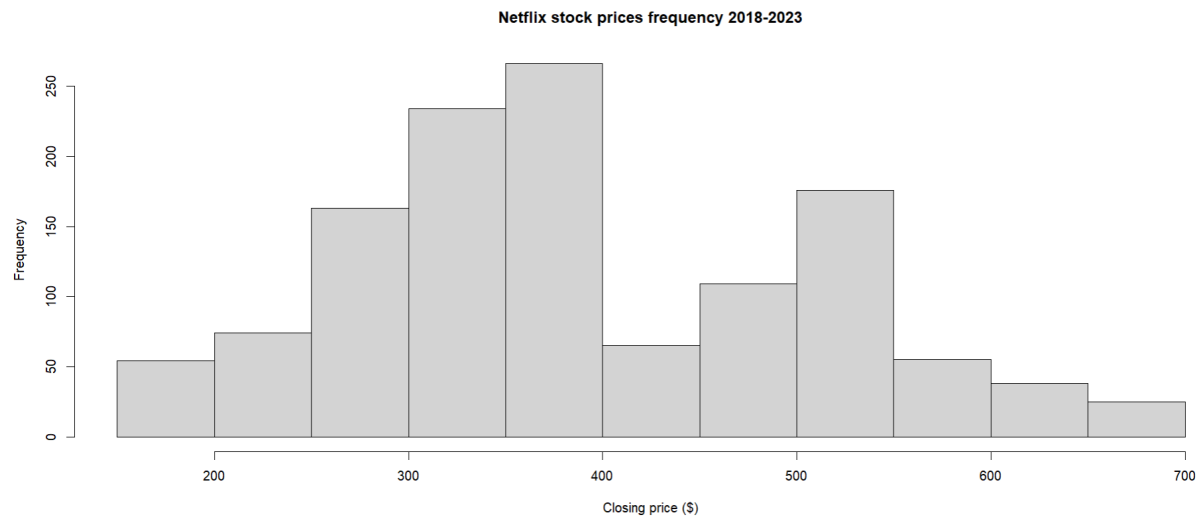
Histogram data analysis

Figure 1- Chart displaying the closing dates over the last 5 years and beginning of 2023



```
> median(stock$Close)
[1] 362.87
```

Figure 2 - Frequency of Closing prices over the last 5 years and beginning of 2023



-Calculation of mode. Code from tutorialspoint¹¹

```
getmode <- function(v) {
  uniqv <- unique(v)
  uniqv[which.max(tabulate(match(v, uniqv)))]
}
result <- getmode(stocks$Closing)
print(result)
[1] 357.32
```

Data Analysis:

To properly understand Netflix's stock value, both the history and frequency rate of its closing price are analyzed. Firstly, Figure 1 is focused on comparing the date to the closing price of the stock. In analyzing the closing price, the median was used to understand where the stock would be in a stable area. This was used over the mean due to two major parts of the graph that result in some skewness with the data. The first is the dramatic rise in 2020, which can be attributed to the effects of the pandemic. Due to the need to stay indoors, people searched for new activities to pass the time, with some settling on spending time watching Netflix. For two years this upwards trend would continue, but would begin to see a sharp decrease, which can be viewed as another situation of skewness of the data. With pandemic restrictions lessening and the gradual return of the world to normal, it can be seen that there was less demand for the streaming service, resulting in a decline.

Secondly, Figure 2's histogram represents the frequency of stock prices for Netflix from 2018 to early 2023. With a bin width of 50, the classification method chosen was equal interval to best display the inequalities with the frequencies of certain values for the closing prices. From Figure

1, it was noted that the highest values of closing prices can be attributed to the pandemic's influence with the major rise in 2020. As the pandemic's influence began to wane, and given its short duration in comparison to the company's lifetime, these extreme values (both small and big) are infrequent. Near the end of the graph the closing price slumped for a bit, but saw a rise towards the end of 2022. From this histogram, the most frequent values lie in the \$350-\$400 range, and more precisely the mode is \$357.32.

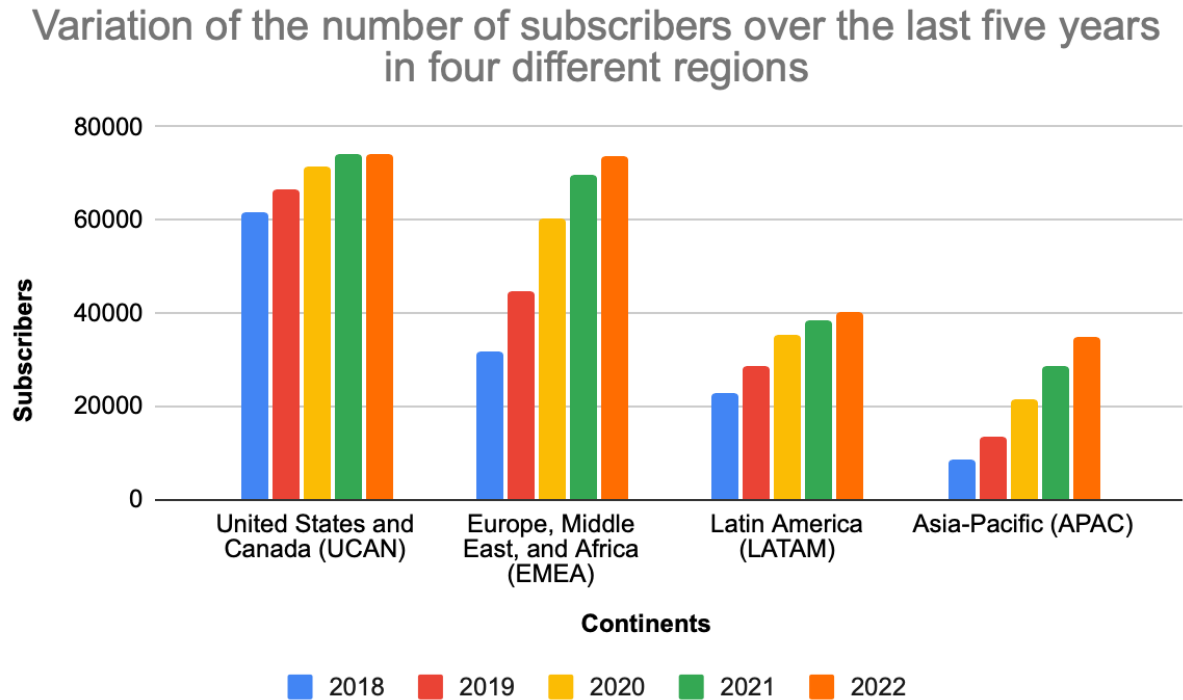
Both this and the median calculated earlier show that the stock's most stable value lies between \$300 and \$400. In the stock's current state, it is now stable, no longer being subjected to the effects of the pandemic. As the pandemic is no longer a deciding factor on its value, Netflix is now a good investment due to being at a point where its stock price will not experience dramatic shifts in change. This gives confidence to investors that Netflix is a company that will not leave anytime soon, and the negative skewness at the end of Figure 1 shows that Netflix is still growing as a company despite its age.

Reasons for the increase in stock value

Despite the lows that Netflix has endured over its stock price history, the company showed that they are still worth investing in due to their vast library. Two relevant parts of Netflix's library when looking at the stock prices are the shows "*Wednesday*" and "*Squid Game*". *Squid Game*'s release date of September 17, 2021 coincides with the dramatic rise in Netflix's stock in 2021. In addition, Netflix's growth after a slump in their stock value is related to *Wednesday*, which had a release date of November 23, 2022 and the stock rose around that period of time. Additionally, *Wednesday* continues to be watched today and is currently in the top 10 of most watched shows in the last week. From these two cases, it can be interpreted that Netflix proves itself to be sustainable with desirable content and it can surpass the demands of its customers. All in all, Netflix's experience allows it to excel in the current environment of the world and still has much to deliver to customers in terms of content.

Spatial Data Analysis

Figure 3 - Variation of subscriber over the last 5 years in 4 regions



Data:

2018:

| Min | 1st Qu. | Median | Mean | 3rd Qu. | Max |
|------|---------|--------|-------|---------|-------|
| 8446 | 19187 | 27184 | 31165 | 39162 | 61845 |

2019:

| Min | 1st Qu. | Median | Mean | 3rd Qu. | Max |
|-------|---------|--------|-------|---------|-------|
| 13247 | 24605 | 36561 | 38246 | 50202 | 66615 |

2020:

| Min | 1st Qu. | Median | Mean | 3rd Qu. | Max |
|-------|---------|--------|-------|---------|-------|
| 21674 | 31891 | 47861 | 47271 | 63241 | 71689 |

2021:

| Min | 1st Qu. | Median | Mean | 3rd Qu. | Max |
|-------|---------|--------|-------|---------|-------|
| 28461 | 36045 | 54046 | 52696 | 70697 | 74234 |

2022:

| Min | 1st Qu. | Median | Mean | 3rd Qu. | Max |
|-------|---------|--------|-------|---------|-------|
| 35019 | 38755 | 56952 | 55731 | 73928 | 74001 |

| Years | 2018 | 2019 | 2020 | 2021 | 2022 |
|-----------------------------------|----------|----------|----------|----------|----------|
| Standard Deviation of Subscribers | 22569.39 | 22868.66 | 22860.81 | 22610.17 | 21138.45 |

Analysis:

Analysis for mean:

The mean of the subscribers in these four regions has been growing consistently from 2018 to 2022. There are three reasons for the growth. The first reason is that Netflix has become more diverse by providing more movies and subtitles in different languages. The second reason is that around the end of 2019 and beginning of 2020 i.e, during covid-19 many people switched from cable TV to streaming services. Moreover, instead of going to the cinema, people prefer to stay at home to watch movies, which also causes the mean of subscribers to increase. The last reason is that Netflix has invested a lot in their original content, such as *"Squid Game"*, *"Money Heist"*. Especially *"Squid Game"*, which reached about 1.65 billion viewers and attracted more people to watch Netflix, hence increasing the number of subscribers.

Netflix users in UCAN and EMEA

After observing the bar chart, it can be inferred that Netflix has the highest number of subscribers in two regions, UCAN and EMEA, where it reached up to 74,001 and 73,904 respectively in the year 2022. It can be observed that UCAN has consistently remained above 60,000 subscribers where it reached its maximum value in the year 2021, this is because the very origin of the company was in the region UCAN which made it easier for the company to reach out to people living in that area. Hence, we can see a constant growth in the region of UCAN.

On the other hand, it can be observed that the EMEA region experienced an immense rise in the number of subscribers where it went from 31,601 in 2018 to 73,904 in 2022 which is almost as many subscribers as UCAN. The first reason is that Netflix updated many different European subtitles namely, French, Spanish and German for the old movies and shows on the platform, this led to more people living in the EMEA region to watch Netflix. The very reason for this is Netflix's initiative to make original content and start streaming foreign movies, especially movies from EMEA. European shows including *"Lupin," "Call My Agent!"*, as well as critically acclaimed hits such as *"The Crown"* and *"Black Mirror"* have helped in the overall increase in the number of subscribers over the past 5 years. After looking at the standard deviation table, it can be said that the standard deviation reached its highest value in the year 2020. deviation of subscribers reached the peak in 2019 which represents that there is a large difference between the number of Netflix subscribers and the mean in four regions. It can be observed that due to the heavy increase in the number of Netflix subscribers in the EMEA region because of a large amount of money being invested in the European market causing the standard deviation to grow significantly high.

Netflix users in LATAM

Even though LATAM had a slow start with the increase in the number of Netflix subscribers as compared to UCAN and EMEA, it was soon able to recover from it and reached 40,000 subscribers by the end of 2022. The very reason for this is because of the popularity of the show “*Sintonia*”, which has been the biggest hit for Netflix in Brazil with season 3 generating around 38 million hours of viewership, indicating that more people subscribed to Netflix during the time the show was being streamed. Hence, leading to an increasing the total number of subscribers in LATAM.

Netflix users in APAC

While looking at the trend of APAC, it can be observed that it has always remained the lowest among all the 5 regions, where it started from a mere 8,446 subscribers. One of the biggest reason for this due to Netflix not being available in China, the country that holds the most population in the world. But, this does not stop Netflix from growing in APAC, the company started increasing its investments in the region by created some of the most famous TV series like “*Squid Game*”, “*Alice in Borderland*” which in the end attracted more people to watch the shows, hence pay for the subscriptions in APAC region. This led to an increase in subscribers in the APAC region which can be clearly seen in the steady growth of subscribers from 2018 to 2022 in the region.


Conclusion:

From all the data observed, there are positive implications for the company. As we can see in Figure 2 that throughout the year 2018, the stock prices remained pretty low. The reason for this can be seen in Figure 3 where UCAN was the only region that had about 60,000 subscribers during that time. Hence being the only major source of income for the company during that year. By the year of 2019, EMEA came to play with more than 40,000 subscribers. The region along with UCAN were capable of keeping the stock prices stable during that year. It can be seen in Figure 2 that in the end of both 2018 and 2019, the company experienced a very slight dip in the number of stock prices. This was due to the influence of free cash flow on the stock value, where Netflix kept using the free cash and invested it on new original content to attract more people to watch their shows and movies. This led to a continuous decrease in the amount of free cash flow during the end of the year leading to a dip in the stock values.

By looking at Figure 2, it can be said that Netflix experienced a huge rise in the stock value at the beginning of the year 2020 and reached up to its highest value by the end of the year 2021. While comparing the stock values with the increase in subscribers in Figure 3, it can be said that in both 2020 and 2021 all the 4 regions experienced an increase in subscribers where UCAN and EMEA reached more than 60,000 and LATAM and APAC reached more than 40,000. The most important reason for this increase was because during this time the entire world was hit by the global pandemic covid-19. During this time, many people switched from cable TV to streaming services where they were able to enjoy more variety of content just by sitting at their home instead of going to the cinema which caused the overall increase in the number of subscribers as well as the stock values during that time.

After observing Figure 2, we can say that there was a drastic dip at the end of 2021 and start of 2022, this can clearly be justified by the fact that people were getting back to in-person after the long time quarantine before that, leading to the dip in the stock values.

But right after the mid till the end of 2022, it can be seen that the stock value increased again and in Figure 3, the number of subscribers for all regions increased as well. The main reason for this growth is because of Netflix's vast library, as mentioned in both analyses "*Squid Game*" was one of Netflix's biggest titles in the entire 2022. It was noted that during its airtime, the stock value increased significantly and the amount of users in the year it was aired grew dramatically in some regions. Along with this, shows like "*Dahmer- Monster: The Jeffrey Dahmer Story*" which earned about 196.2 million hours of views and "*Wednesday*" which earned about 341.2 million hours of views in the first week of their premiere. All these shows helped the total increase in the stock prices for the company by the end of 2022. Overall, we can tell that Netflix is a successful



company in the streaming market due to their forward planning and good strategies to attract subscribers in the global size.

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