

Business Case for Chrome Functionalities

Important Note: the [blue texts](#) you will find below are clickable links in pdf format.

Executive Summary:

As Apple is anticipated to launch its own search engine in 2023, Google LLC's search engine market share is expected to be reduced significantly. Consequently, reducing revenues, profits, and share price.

Browsers and search engines are expected to have a strong positive correlation between product families. Example: Safari users will be more likely to have the new search engine as their default search engine.

Apple has a favorable position to penetrate the search engine market through its devices and, consequently, Safari.

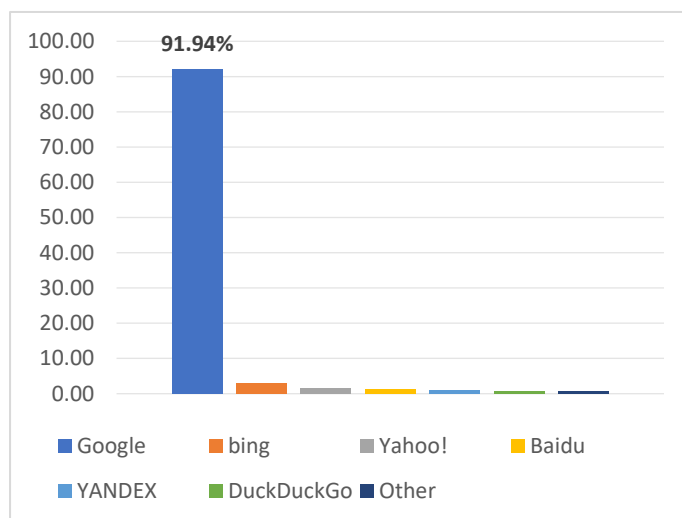
One percent loss of Google LLC's search engine already established market share could equal around to \$1.29 billion revenue loss from search engine ads [[Calc.2](#)] in one year as per the Financial Statements for the year ended December 31, 2021. (The yearly estimate is expected to increase each year) [[Table 4](#)]

Market share of Safari users' having Google as their default search engine (18.02 percent [[Calc.1](#)]) is estimated around to \$23.24 billion revenue from search engine ads [[Calc.3](#)] in one year as per the Financial Statements for the year ended December 31, 2021. (The yearly estimate is expected to increase each year) [[Table 4](#)]

Google LLC can use minimal resources to create a stronger bond with its users by upgrading Chrome's underdeveloped features in an attempt to retain its users or to gain a better browser position on Apple's devices, consequently, retaining or gaining back search engine market share when Apple's new search engine is launched.

A. Positions in the Device, Browser and Search Engine markets as per December 2021:

Apple is anticipated to launch its own search engine in 2023.

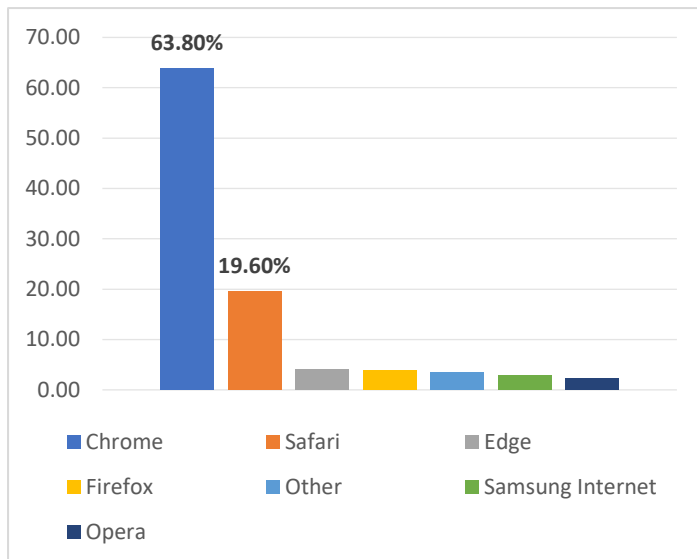


Search Engine Market Share Worldwide as at Dec 2021 [Table 1]

Google	91.94%
bing	2.86%
Yahoo!	1.50%
Baidu	1.37%
YANDEX	1.10%
DuckDuckGo	0.67%
Other	0.56%

<https://gs.statcounter.com/search-engine-market-share>

Google is the current dominant Search Engine with a global market share of 91.94 percent. [[Table 1](#)]

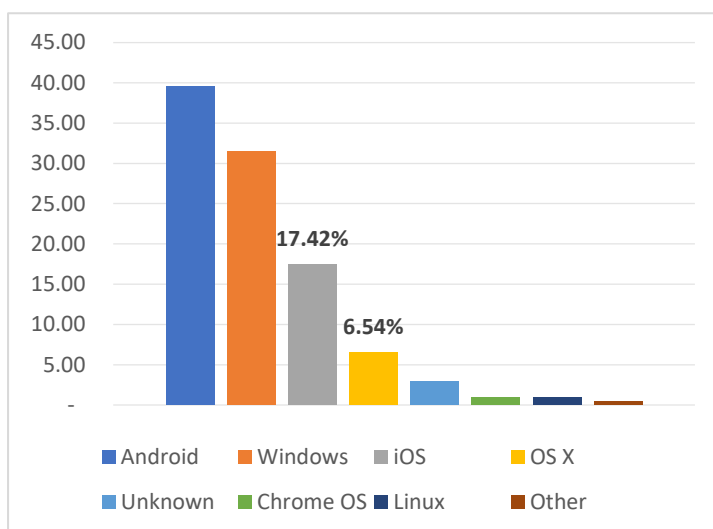


Browser Market Share Worldwide (all platforms) as at Dec 2021 [Table 2]

Chrome	63.80%
Safari	19.60%
Edge	3.99%
Firefox	3.91%
Other	3.50%
Samsung Internet	2.85%
Opera	2.35%

<https://gs.statcounter.com/browser-market-share>

Chrome holds 63.80 percent of the browser market share, while Safari (Apple) holds 19.60 percent. [Table 2]



Operating System Market Share Worldwide as at Dec 2021 [Table 3]

Android	39.49%
Windows	31.44%
iOS	17.42%
OS X	6.54%
Unknown	2.91%
Chrome OS	0.93%
Linux	0.90%
Other	0.37%

<https://gs.statcounter.com/os-market-share>

Apple controls 23.96 percent (iOS + OS X) of the computer, tablet, and mobile markets and has successfully converted a staggering 81.80 percent of its device users to Safari users. (19.60 percent of 23.96 percent: 81.80 percent *conversion rate*) [Table 2 & Table 3]

Assumption: The conversion rate was based on the assumption that all Safari users are Apple product users; however, no data were discovered to support this assumption.

Conclusion from A: Google LLC currently enjoys a search engine monopoly and is the [price-maker](#), hence, advertising packages are costly for the advertisers and lucrative for the company. Apple has a favorable position over Google LLC on the devices front.

B. Why Chrome play's a significant role for the future:

If Apple achieves a similar [conversion rate \(81.80 percent as mentioned above \)](#) between the Safari browser and Apple's new search engine, Safari users will be more likely to use Apple's new search engine, whilst Chrome users will be more likely to use Google as their default search engine, establishing a [strong positive correlation](#) between product families.

As long as people buy Apple products this can be a recurring issue for Google LLC.

Conclusion from B: It is anticipated that browsers and search engines will have a strong positive correlation between product families; losing market share in either area will result in comparable search engine market share losses.

Conclusion from A and B: Apple has a favorable position to penetrate a significant portion of the search engine market through its devices and, consequently, its browser.

C. The impact Apple's market penetration can have on Google:

- In the absence of a monopoly, Google LLC's status as a price-maker will be lost as Apple will lower its advertising [prices \(through search engine\) to penetrate the market](#).
- Apple is a premium brand, and its products are priced accordingly; thus, the new search engine users will be in a majority of higher economic status or bigger spenders. This indicates that, on average, a Safari user can be more valuable than a Chrome user. Allowing Apple to isolate and control a highly valuable [market segmentation](#) for [targeted advertising](#).
- Advertisers might choose between Apple's or Google LLC's market share, or both, and divide their advertising budget through search engine' between the two companies.
- Reduction in the amount of [big data](#) collected by Google LLC, leading to a decrease in the sale of data and an increase in the requirement to purchase unavailable data for accurate data-driven decisions.
- Google LLC can lose up to 18.02 percent [[Calc.1](#)] of its search engine ad revenue each year from Safari's share market alone. This amount it is estimated at around \$23.24 billion revenue [[Calc.3](#)] as per the Financial Statements Year Ended 31 December 2021 (the yearly estimate is expected to increase each year). [[Table 4](#)]
- One percent loss of Google LLC's search engine already established market share could equal around to \$1.29 billion revenue loss from search engine ads [[Calc.2](#)] in one year as per the Financial Statements for the year ended December 31, 2021 (the yearly estimate is expected to increase each year). [[Table 4](#)]

After Apple establishes a significant market share a [duopoly](#) will be formed. Although highly unlikely and unethical, both firms can enter into a secret agreement for a [non-price competition](#) while functioning in co-operation as the price-maker resulting to a [profit maximizing price](#) for both companies. At this point, Google LLC will have already lost a substantial amount of revenue and value, but it will be able to maximize its new, disadvantaged position. Again, although highly unlikely and unethical in the business world sometimes decisions are made on a simple cost – benefit analysis, for example the court case of [4.9 billion jury verdict in General Motors fuel tank case](#).

Conclusion from C: After Apple penetrates the search engine market, Google LLC is expected to have a significant decrease in revenue and stock price due to a weakened market position. Although there won't be an [expense associated with Apple's products having Google as the default search engine](#),

costs associated with the acquisition of large data are anticipated. ([Understanding Monopoly & Forces That Move Stock Prices](#))

D. How can Google LLC defend its market share?

From devices perspective:

Google LLC as a company enjoys less than 1 percent market share of Computer, Tablet, and Mobile markets [[Table 3](#)], leaving the company at a serious disadvantage defending the market penetration in the search engine market from the devices front.

From browser perspective:

One way Google LLC can defend its position, is by making Chrome as enticing as possible by incorporating new or improved features in particular areas where it is still deficient.

One of the problems that goes unnoticed about Chrome, is that if you were to be asked “What is your favorite Chrome feature?”, you won’t have an immediate response. I would expect an answer along the lines of “I am not sure, but I like the design” and that is exactly the problem.

Chrome needs a stronger bond with its users to retain as much market position as possible. New or improved features can create that.

Specifically, although the ‘bookmark manager’ is a small feature in Chrome, it should be a high-priority item in the list of things that need to be improved because it is used by hyper-users and professionals but is currently underperforming. ([E. Chrome’s ‘Bookmark Manager’ underperforming features](#))

Hyper-users and professionals are often the ones advocating for products in forums and to social circles. This [word-to-mouth advertising can add nearly twice as much long-term value to the firm than normal marketing](#) and, in some instances, shift market positions. Therefore, certain improvements are needed to be made.

Compared to the market loss Google LLC could potentially incur, the cost-to-benefit ratio outshines any skepticism about whether the company should take action.

Conclusion from D: Google LLC can use minimal resources to upgrade Chrome’s underdeveloped features in an attempt to retain its users or to gain a better browser position on Apple’s devices, consequently, retaining or gaining back search engine market share when the new search engine launches.

E. Chrome’s ‘Bookmark Manager’ underperforming features:

Searching & Locating Bookmarks:

1. Searched items cannot be sorted by **Title** or **Date added**, making it time consuming to find what you are looking for.
2. After finding what you are looking for, it is hard to identify the parent folders of the bookmarks in the Tree View structure. (Especially if you have lots of folders)

Save Multiple Bookmarks:

1. You cannot save multiple bookmarks without bookmarking every tab in the window. Therefore, you have to split the window. Creating a mess.
2. If you want to save multiple bookmarks in different folders, you have to split the window multiple times and repeat the process multiple times.

3. You cannot edit the **Title** or **URL** of the bookmarks while saving them. You have to edit them after you save them one by one from the Bookmark Manager.

Shortcuts for Websites:

1. Chrome does not provide keyboard shortcuts to open favorite websites.

All of the above issues have been resolved by my three published Chrome Extensions.

1. [Searching & Locating Bookmarks](#)
2. [Save Multiple Bookmarks](#)
3. [Shortcuts for Websites](#)

F. Small things can have big impacts.

- Google: [Switching the shade of blue used on advertising links in Gmail and Google search earned the company an extra \\$200m a year in revenue.](#)
- Google: [Load times increase from 1s to 3s, the probability of bounce increases by 32%.](#)
- Amazon: [Every 100ms of latency would decrease 1% of their sales.](#)
- BBC: [BBC's website loses 10% of its visitors for every additional second of load time.](#)
- Stanford study: [Emoticons on electricity bills can reduce energy use](#)

When you deal with people, even seemingly inconsequential flaws or changes become significant.

Calculations and assumptions

-- Calculations --

1. Estimated Google's search engine portion of the market that is being used by Safari users:

$\% \text{Safari's browser market share} \times \% \text{Google's search engine global market share}$

$19.60\% \times 91.94\% = \underline{18.02 \text{ percent Market share of Safari users' having Google as their default search engine}}$

2. 'Google's Search' ad revenue decrease from one percent loss of Google's search engine market share:

$1\% \times (\$ \text{Actual 'Google's Search \& other' revenue 2021} - \$ \text{Estimated 'other' revenue 2021})$

$1\% \times (\$148.95 \text{ billion} - \$20 \text{ billion}) = \underline{\$1.29 \text{ billion revenue}}$

3. Estimated proportion of ad revenue generated in 2021 by Google's search engine portion of the market that is being used by Safari users:

$\% \text{Safari's browser market share} \times \% \text{Google's search engine global market share} \times (\$ \text{Actual 'Google's Search \& other' revenue 2021} - \$ \text{Estimated 'other' revenue 2021})$

$19.60\% \times 91.94\% \times (\$148.95 \text{ billion} - \$20 \text{ billion}) = \underline{\$23.24 \text{ billion revenue}}$

-- Assumptions --

General Assumption

- i. 1 percent loss of market share equals to 1 percent of 'Google's Search' ad revenue loss. ([Perfectly positive correlation](#))

Safari's browser market share as at YE 2021 - 19.60% [[Table 2](#)]

- i. No assumption needed

Google's search engine global market share as at YE 2021 - 91.94% [[Table 1](#)]

- i. As per 'The New York Times' [in 2020 Apple received an estimated \\$8 billion to \\$12 billion in annual payments in exchange for building Google's search engine into its products](#). You could argue that due to the preceding agreement, the 91.94 percent is not reflective of the Safari's market share and that an increase should be applied to the Safari's portion of the market, but I deemed it more prudent to err on the side of caution and have the percentage reflect the total market.

Actual 'Google's Search & other' revenue as at YE 2021 - \$148.95 billion [[Table 4](#)]

- i. The categorization of advertising revenue from 'Google Search' includes revenue from 'other' sources such as Gmail, Google Maps and Google Play. [[Table 5](#)]
A presumption must be made in order to divide 'Google Search' and 'other' into two distinct groups in order to isolate the proportion of revenue from the search engine.

Estimated proportion of 'other' revenue as at YE 2021 - \$20 billion (assumption) [[Table 5](#)]

- i. The phrase "Google Search & other" [[Table 4](#)] implies that a significant percentage of the company's revenue comes from the search engine, with "other" serving as an add-on number.
- ii. I would assume that the 'other' ad revenue does not surpass the \$28.85 billion YouTube ad revenue or even the 10% of overall advertising revenue (\$20.9 billion). If this were the case, the auditors would possibly classify it as a separate category.
- iii. Total 'other' revenue estimated at \$20 billion.

[[Table 4](#)]: Google LLC's Revenue, audited by Ernst & Young LLP pg.67

Financial Results

Revenues

The following table presents revenues by type (in millions):

	Year Ended December 31,	
	2020	2021
Google Search & other	\$ 104,062	\$ 148,951
YouTube ads	19,772	28,845
Google Network	23,090	31,701
Google advertising	146,924	209,497
Google other	21,711	28,032
Google Services total	168,635	237,529
Google Cloud	13,059	19,206
Other Bets	657	753
Hedging gains (losses)	176	149
Total revenues	\$ 182,527	\$ 257,637

https://abc.xyz/investor/static/pdf/2021_alphabet_annual_report.pdf?cache=3a96f54

[Table 5]: Google LLC's note on 'Google Search & other', audited by Ernst & Young LLP pg.63

- Google Search & other, which includes revenues generated on Google search properties (including revenues from traffic generated by search distribution partners who use Google.com as their default search in browsers, toolbars, etc.), and other Google owned and operated properties like Gmail, Google Maps, and Google Play;

https://abc.xyz/investor/static/pdf/2021_alphabet_annual_report.pdf?cache=3a96f54