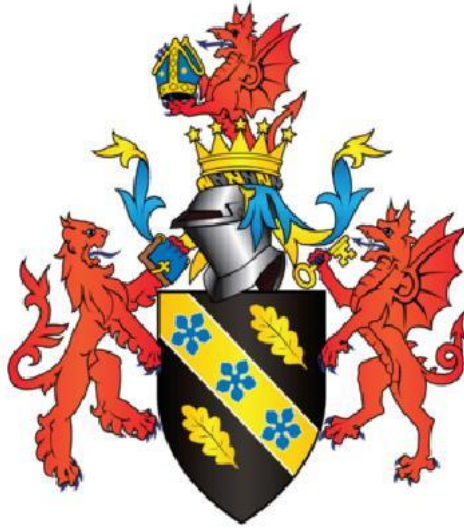


Report on Google's environmental power and future development



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Global Business Challenges

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Executive Summary

The purpose of this report is to research to the literature related to the development of Google and the development of the Internet, and to analyze and summarize the situation of Google by using PESTEL analysis model. Google is a world-renowned technology company, as an Internet giant, Google has achieved great success worldwide by virtue of its innovative search engine technology and outstanding product line. But the recent challenges to Google's marketplace have had a big impact on its operations: the main search engine business is challenged, advertising revenue continues to decline, the proportion of cloud computing business is still low, and artificial intelligence has lost another round to Microsoft. At the macro perspective is not optimistic either, more and more countries, regions and organizations around the world have reached a consensus that Google has too much monopoly power in the digital market. This has put enormous pressure on the United States to act.

This assignment mainly focuses on the business model of Google, examines the business model of the whole Internet enterprise through the evaluation of the deconstructive elements of its business model, and tries to analyze some components of Google's business model, and makes some predictions on the future development of Google and its Internet industry. In the increasingly fierce competition in the Internet industry, it is easy for Google to improve its profitability by cultivating user loyalty and product stickiness compared with such enterprises in a monopoly position. This is why many policies and other circumstances limit their development.

This assignment will try to understand Google from three aspects: the development of the Internet, competitors and its own business.

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1. Introduction

Google was founded in 1998s and it emerged as a search engine. The background of Google was originally meant to be named the 'googol', which means the number '1' followed by 100 '0s' to form a googolplex(Sergey Brin & Larry Page, 1998). Google is one of the largest and fastest growing technology companies in the search engine industry in the world.

Google's purpose is to upload the world's information to the Internet and make it available to those who access it. From the very beginning, Google had a noble purpose, and over time, Google gradually showed its potential. The search affects not only our perception of the internet, but of the real world(Pasquale F, 2015). With the search function, the satisfaction of people's thirst for knowledge is greatly improved, and the work efficiency is also improved.

Google also shows ads when users type in a search and get results back. In addition, Google provides free services and products to users, such as countless free search services, Google Maps, mobile phone services, and so on. Because these services draw millions of users to Google's sites, advertising provides a steady stream of revenue. Google makes the bulk of its money from keyword advertising on the open web, not in the walled gardens of apps(Slefo,Georges,2016).

Google has enjoyed remarkable growth over the past few years, with its share price once topping \$3,000. Overall, Google has great growth potential as a company, and continuous innovation is the foundation of the company's continued success in the future. As the company has expanded, Google has ventured into other industries.

2. Business competitive environment assessment

The evaluation of business model is an important link to predict whether a model is feasible and detect the implementation of a model, but there are relatively difficult to quantify the problem. The following article wants to analyze from some perspectives.

(1) Analysis of the development status of the Internet

The emergence and development of Google is based on the Internet, that is to say, the development of Google and other search software cannot be separated from the development of the Internet. To analyze Google, then need to analyze the Web. The current development of the Internet is as follows:

A. The popularity of mobile Internet

The popularization of mobile Internet is an important trend in the development of the Internet industry, and it has become an indispensable part of People's Daily life. For example, a 2009 report by Morgan Stanley highlighted that the mobile Internet is growing faster than the desktop Internet ever did (Morgan Stanley, 2009). Because of

the great influence of mobile phones on modern people, the development of mobile phones is also very fast, of course, the development of mobile Internet is also fast.

Whether in shopping, social networking, entertainment and other aspects, mobile Internet plays an important role. At present, mobile Internet users have exceeded 500 million, among which mobile payment users have reached 300 million. It is clear that users need search engines when they use the mobile Web. So the mobile web is helping Google. Google is making wider use of a technology that loads Web pages faster and consumes less data than usual(Karpinski Rich,, 2007)

B. Application of artificial intelligence

With the rapid development of the digital era, artificial intelligence technology will also develop rapidly, and enter people's production and life with an irresistible development trend.

With the progress of science and technology, People are paying more and more attention to the research and development and application of artificial intelligence. In recent years, the development of artificial intelligence products and industries has attracted much attention, such as intelligent robots, surgical robots, intelligent equipment, etc. Their birth further broadens people's way of life, realizes the intelligence of human life, and makes people step into the era of intelligence. With the development of market technology, biometric technology has been developed and

attracted people's attention, which also represents the further development of artificial intelligence technology.

If compared with developed countries, China's artificial intelligence technology started relatively late, but is now developing rapidly. Especially in recent years, with the continuous deepening of artificial intelligence products in life, people pay more attention to artificial intelligence technology. Global technology companies such as Microsoft, IBM, Google, and Amazon have been working intensively for decades on advancing AI-based digital assistants and have recently made them suitable for the mass market(Maedche, Alexander&et al, 2019). Artificial intelligence has become an important part of the Internet industry. AI research has been going on for over 65 years and has made impressive achievements in terms of theoretical study and real-world applications(Subrahmanian, V.S., 2021).

Through AI technology, Internet enterprises can better understand user needs and provide more personalized services.At present, artificial intelligence technology has developed into many fields and has been widely used in many industries. For example, intelligent speech recognition, intelligent image recognition, AI speech conversion and so on. The AI market is projected to grow to \$190 billion by 2025, at a CAGR (compound annual growth rate) of over 36% between 2018 and 2025(Market research report, 2021).

C. The popularity of cloud computing

Similar to E-commerce, cloud computing is one of the most vague technique terminologies in history(Luo, Zhiguo&et al, 2009). In fact, cloud computing can do much more for the Internet. Cloud computing has gradually become one of the important technologies in the Internet industry. Perhaps the simplest working definition of cloud computing is “being able to access files, data, programs and 3rd party services from a Web browser via the Internet that are hosted by a 3rd party provider(Steven Hodson, 2008).

Cloud computing has gone through more than ten years, from a sudden rise to a hundred flowers and then to the rise of giants, the cloud computing market also appears the Matthew effect. The current cloud computing market has the following obvious trends. Clustering differentiation: Since cloud computing is a scale business scenario, marginal costs do not appear until a certain scale is reached, so there have been interesting changes in cloud computing in recent years.

On the one hand, some enterprises continue to grow bigger and stronger, while feeding the benefits of large-scale technology to the market and customers, so that the final consumers can enjoy the benefits of cloud computing. On the other hand, some small and medium-sized cloud computing manufacturers focus on the characteristics and advantages of the industry, vertical depth and thickness, other small and medium-sized cloud computing manufacturers are transformed into cloud

computing technology Q consulting, implementation service manufacturers. The entire cloud computing industry has changed from the original situation where all cloud computing vendors were flocked to IaaS.

The cloud phenomenon is quickly becoming an important service in Internet computing. Infrastructure as a Service (IaaS) in cloud computing is one of the most significant and fastest growing field. Steady growth: After years of rapid growth, as the scale of cloud computing vendors gets bigger, the growth rate is gradually stabilizing (Sunilkumar S. Manvi & Gopal Krishna Shyam, 2014).

Narrowing gap: Several leading cloud computing vendors are catching up with each other, and the gap between them is narrowing, especially between Microsoft and AWS. Competition among cloud computing vendors has further intensified.

Regional differences are obvious: there are obvious regional effects in the Asian region. As Alibaba Cloud originated in the Asian region, its market share is significantly higher than that in other regions. In Europe and the United States, AWS, Microsoft and Google have an absolute advantage (Global Technology Service, 2022).

Through cloud computing technology, enterprises can store data in the cloud to realize data sharing and management. At present, cloud computing has been widely

used in the information construction of enterprises, and has become an important means for enterprises to improve efficiency and reduce costs. Google Apps is the paramount example of Cloud computing, it enables to access services via the browser and deployed on millions of machines over the Internet.(Farhan Bashir Shaikh &Sajjad Haider, 2011)

(2)Analysis of competitors

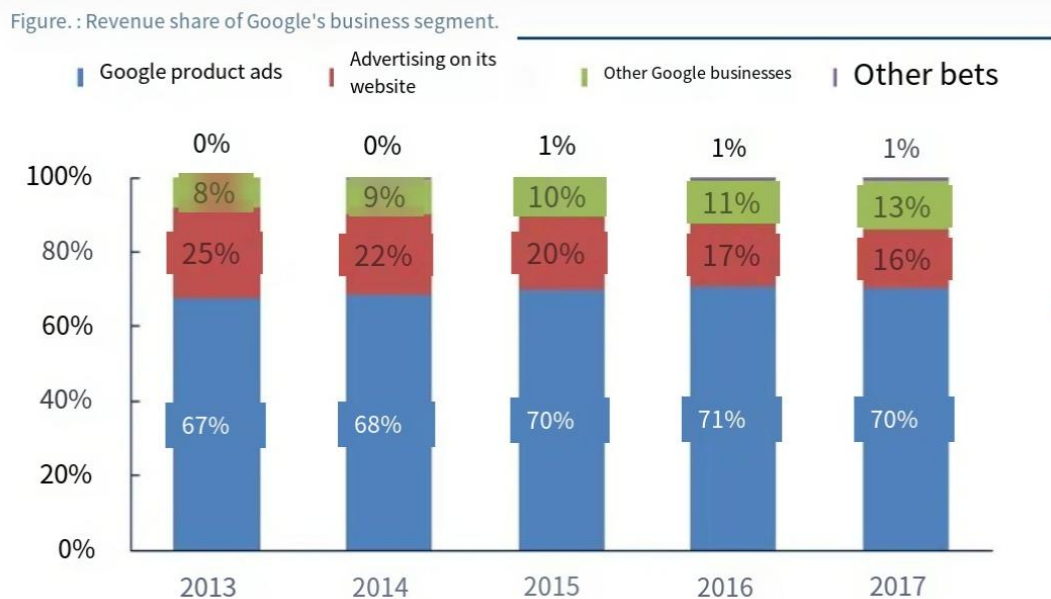
Because Google's search engine is only one part of the business, Google's competitors include cloud computing services and video sites(Like Microsoft, even Amazon is a competitor). Is Google too powerful? Some argue that politics and economy are intertwined with media and communication and ‘new communications technologies have made it possible for media giants to establish powerful distribution and production networks within and among nations(Robert W. McChesney, 2002).

It makes sense that Microsoft is a competitor to Google because it has its own search engine(Bing). In addition to Microsoft, e-commerce platforms have also become competitors. It is no exaggeration to say that Amazon is a competitor to Google and a threat to Google, According (Dani N, 2022) to the survey, while Google has reigned as the leading search engine ever since its inception in 1997, the survey reveals that 62% of consumers now begin their search for new products on Amazon, while only 18% of consumers went to Google(Dani N., 2022)).

(3) Analysis of own business capability

Advertising is the company's main source of revenue, since Google, like every other platform, need to generate money their business model focuses on advertisement(Ehsan Jahandarpour , 2016). In this regard, Google is no different from any other company. Most of Google's revenue comes from advertising not from the direct selling of its online services or applications (Google, 2011). But Google's revenue from advertising is unprecedented, ahead of other industries and peers. According to Advertising Age, Google's revenue in 2009 topped all digital-media companies and was 13th among the 100 top media companies (Johnson, 2010).

In 2006, Google acquired YouTube for \$1.65 billion in a stock-for-stock transaction (Google, 2006). From this point on, Google began a strategic route of acquiring or merging other companies across industries. Unlike other important acquisitions, Android was not yet a major player (having been bought for US\$50 million) (Callahan, 2018). In June 2019, Google acquired Looker, a business intelligence company, for US\$2.6 billion (Finley, 2019). In November 2019, Google announced the acquisition of smartwatch and fitness device company Fitbit for US\$2.1 billion (Gartenberg, 2019). Google began to become an investor. The process continued through 2020. European antitrust regulators started to assess the competition impact on the digital health sector (Vincent, 2020).



(Figure 1 Revenue share of Google's business segment Source: google.com)

At first, multiple leading and into the field of Internet of Things. In terms of products, Google provides operating systems, cloud services and patent licensing for enterprises, online search, video, email, maps and other services for individuals, as well as hardware smart home, mobile phones, notebooks and other products. In 2016, the Company changed its development strategy from "mobile first" to "artificial intelligence first". In the field of technology development, from the traditional search engine business, mail, video, operating system, to the frontier of artificial intelligence, driverless driving, smart home, Google is occupying the leading position in the industry. By various means, Google's general search, search advertising and general search text advertising do not have to face fierce competition. Google has damaged the rights and interests of consumers, because the service quality of general search services (including privacy, data protection and customer data use) has been reduced due to the limitation of competition, and consumers' choices have been reduced and innovation has been suppressed.

Google hurts advertisers' profit margins because by limiting competition, it has more power to control AD inventory, conduct dynamic protection, and charge advertisers more than rivals. Google can also reduce the quality of its service to advertisers, for example by providing advertisers with less information about their AD campaigns. Google hurts competition by restricting the distribution of new apps that provide search services. By raising costs for competitors and forcing them to take advantage of effective distribution channels, such as voice assistants, Google has made it impossible for them to challenge Google's monopoly in general search services; Google's monopoly in general search gives the company a privileged position as an Internet portal, which it can use to promote its own content and increase its profits.

Google used to call itself the "revolving door" of the Internet(turnstile), which uses organic search results to direct users to third-party sites by responding "best" to their needs. Over time, however, Google moved down the rankings of organic search results, offering more and more search advertising results, as well as information about Google's own products. This behavior makes some links scroll down to see them, thus weakening the connection between users and third-party sites, causing third-party sites to buy more and more ads to stay connected. This increases their costs, reduces their competitiveness, and impairs their ability to innovate and invest in new products. Clearly, investors are increasingly reluctant to invest in Startups with verticals that have business models like Google's or that compete with Google's.

3. Business competitive environment analysis(PESTEL)

PESTEL analysis model is an effective tool to analyze the macro environment, can not understand the external environment, and can identify all the forces that have an impact on the organization. It will be analyzed from the following aspects:

(1) Political

Google may be politically motivated, it has long been blocked in China, which is now an important market for many companies, so losing it would be extremely bad for Google's development. Google has been suspected of a political agenda a number of times with negative effects on its brand image. Particularly, Google has been accused by Chinese state media for 'playing an active role in exporting culture, value and ideas'(Reuters , 2015). Google is not willing to give in to any resistance.

Project Loon, one of Google X's initiatives, uses multiple hot air balloons to provide fast and stable Wi-Fi access to people in designated area, the project is perceived as undercover by US intelligence services to conduct espionage activities(Goldstein, P., 2023). Therefore, from the analysis of a large amount of literature, the political factors are not good for Google.

(2) Economic

As the global economy slumps in the wake of the pandemic, industries are not immune. Google has indicated it plans of cutting 12,000 jobs to reduce. (Tech review Africa, 2023)

The international community is relatively optimistic about the future economic development. According to the update of the World Economic Outlook Report released by the International Monetary Fund (IMF) on January 30, the global economic growth is expected to be 2.9% in 2023 and rise to 3.1% in 2024

Latest World Economic Outlook Growth Projections			
(real GDP, annual percent change)	ESTIMATE	PROJECTIONS	
	2022	2023	2024
World Output	3.4	2.9	3.1
Advanced Economies	2.7	1.2	1.4
United States	2.0	1.4	1.0
Euro Area	3.5	0.7	1.6
Germany	1.9	0.1	1.4
France	2.6	0.7	1.6
Italy	3.9	0.6	0.9
Spain	5.2	1.1	2.4
Japan	1.4	1.8	0.9
United Kingdom	4.1	-0.6	0.9
Canada	3.5	1.5	1.5
Other Advanced Economies	2.8	2.0	2.4
Emerging Market and Developing Economies	3.9	4.0	4.2
Emerging and Developing Asia	4.3	5.3	5.2
China	3.0	5.2	4.5
India	6.8	6.1	6.8
Emerging and Developing Europe	0.7	1.5	2.6
Russia	-2.2	0.3	2.1
Latin America and the Caribbean	3.9	1.8	2.1
Brazil	3.1	1.2	1.5
Mexico	3.1	1.7	1.6
Middle East and Central Asia	5.3	3.2	3.7
Saudi Arabia	8.7	2.6	3.4
Sub-Saharan Africa	3.8	3.8	4.1
Nigeria	3.0	3.2	2.9
South Africa	2.6	1.2	1.3
Memorandum			
Emerging Market and Middle-Income Economies	3.8	4.0	4.1
Low-Income Developing Countries	4.9	4.9	5.6

Source: IMF, *World Economic Outlook Update*, January 2023

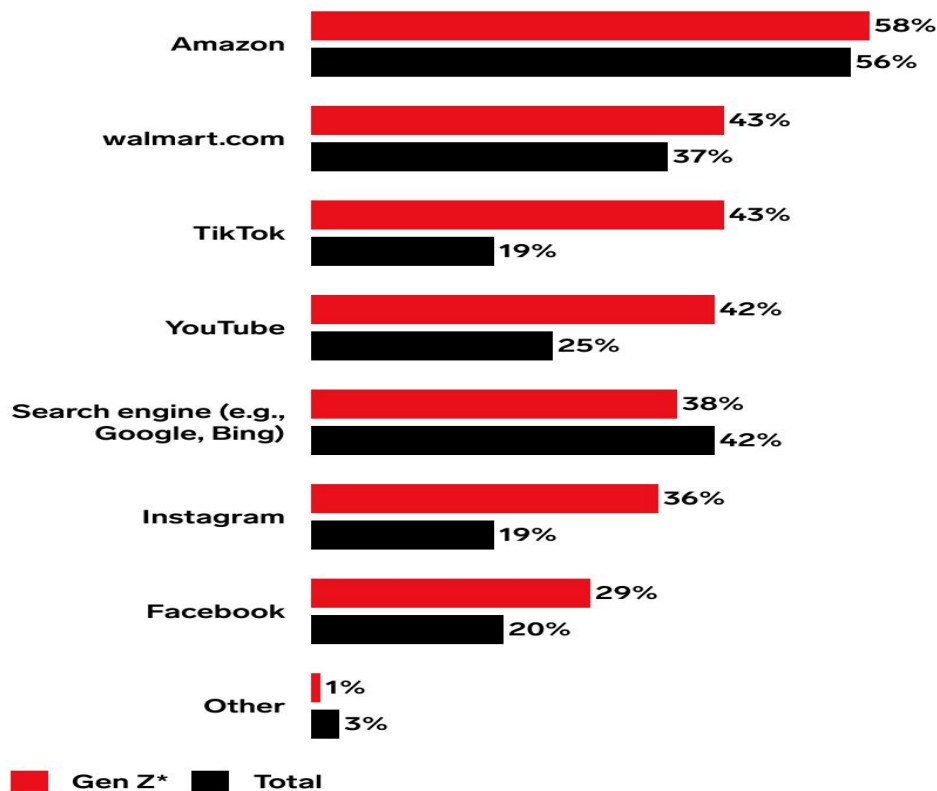
Note: For India, data and forecasts are presented on a fiscal year basis, with FY 2022/23 (starting in April 2022) shown in the 2022 column. India's growth projections are 5.4 percent in 2023 and 6.8 percent in 2024 based on calendar year.

(Figure 2 Latest World Economic Outlook Growth Projections, Source: IMF.org)

Insider Intelligence(Debra Aho Williamson, 2023) also highlighted the threat to Google search in a September feature. It said: TikTok is hugely popular among younger consumers. We estimate that 61.3 per cent of Gen Z in the US use TikTok at least once a month. Moreover, research conducted this spring by the Pew research Center showed that 58 per cent of US teens between the ages of 13 and 17 visit TikTok at least once a day and 16 per cent visit TikTok "almost often".

Where US Adults Start Their Online Product Searches, Gen Z* vs. Total, Feb 2023

% of respondents



Note: *ages 18-26

Source: Jungle Scout, "Consumer Trends Report: Q1 2023," March 21, 2023

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eMarketer | InsiderIntelligence.com

(Figure 3 Online searches VS. Total, Source: insiderintelligence.com)

In addition, because Google is a multinational company, its earnings are also affected by exchange differences, inflation and other factors, because the analysis of the economic environment is not favorable for Google's development. Google's AI development and research may be the foundation of its foothold and continued growth. (Casey Ross, 2020)

(3) Social

According to a recent Pew survey, the majority (or 68 per cent) of internet users in the USA believed that search engines were a fair and unbiased source of information,

compared to a relatively low proportion of respondents (19 per cent) saying they did not place their trust in search engines.(Deborah Fallows, 2006)

In France, there are feelings and behaviors against Google due to different cultural attributes. makes Google a natural target for projects such as Gallica and Quaero that constitutes 'part of a much wider revolt against American dominance of the web'.(Bobbie Johnson, 2006)

Other cultural influences, like in China, a spokesman for China's Foreign Ministry said that foreign companies in China should abide by Chinese laws and regulations, respect Chinese public territory and cultural traditions, and assume corresponding social responsibilities. Google is no exception.(Huan Qiu, 2010)

But it's not all opposition. There's a lot of support for Google,They believe that Google's technical results and the company's privacy claims (mentioned earlier in the case against the U.S. Department of Justice), there is no human involvement or manipulation of results, which is why users have come to trust Google as a source of objective information untainted by paid placement.(Google, 2006)

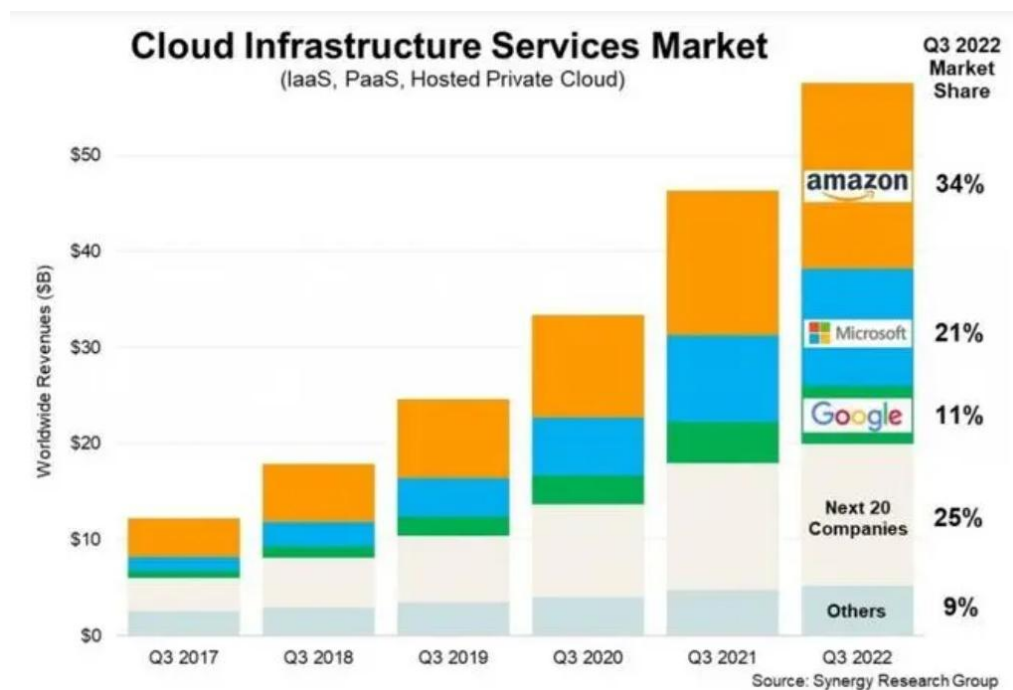
(4) Technological

Google has always been committed to technological innovation and R&D investment, and constantly launched products and services with disruptive impact. Its core technologies include search engine algorithms, big data analysis, artificial intelligence, etc., Google will invest in the development and use of AI in areas such as cybersecurity, training, military recruiting, veterans' health care and search and rescue.(Sundar Pichai, 2018) and providing users with efficient and personalized search results and various practical tools.

Further important elements within the macro-environment are technologies such as the Internet, nanotechnology or new composite materials, whose impacts can spread far beyond single industries(Whittington et al, 2019). Google has now positioned itself as an "AI-first" company(Matt Binder,2023). Google announced the shift from "MobileFirst" to "AIFirst" strategy, and AI has gradually become the most important part of Google's strategic map. Meanwhile, the role of technology in general and ICTs in particular remains a much neglected factor in the study of global political economy(See Susan Strange,1996).

That same year DeepMind released its blockbuster AlphaGo. In 2023, DeepMind will merge with GoogleBrain to explore the boundaries of AI development. Google has launched a layout in deep learning framework, algorithm model, computing power and other aspects, and has built high technical barriers.

According to the latest data from Synergy Research, Google Cloud's market share in global cloud infrastructure was 11% in the third quarter of 2022, significantly overtaking Alibaba Cloud (5%), but still far behind Amazon AWS (34%) and Microsoft Azure (21%).



(Figure 4 Cloud Infrastructure Services Market,Source:Synergy Research Group)

Digital assistants generally have a specific extent of interactivity and intelligence in order to help users to perform tasks (Maedche et al. 2016). But the development and improvement of technology will also bring security risks,Like (Andrejevic , 2006) argued that the nature of new technology's interactivity is, in fact, causing a significant loss of privacy among non-equal parties.

(5) Environmental

The world of the Internet has new technologies emerging every day, or old things being iterated. With the increasing maturity of Internet technology, the cost of Internet is getting lower and lower. The Internet economy is carried out through cyberspace. In addition to providing real goods and services, other content is established in the virtual space.

This also makes the Internet economy do not need to occupy and use too much social resources, low operating costs. The Internet economy is oriented to the whole network, and the Internet has covered the whole world, so that the global market can be traded through the Internet. This adds infinite possibilities to enterprises participating in the Internet economy, and the wider the marketing scope, the more obvious the economic benefits will be brought. (Luo Yaozong, 2005)

On the other hand, compared with the real economy, the Internet economy is carried out online and is not restricted by region. The Internet is a new thing, and the development of the Internet economy is less than 20 years ago, which is very short in the long history of human development. These days, ChatGPT, an AI-based chatbot, has captured the tech community's interest, causing the internet to break down(Md. Saidur Rahaman 2023).

CHATGPT is a joy to some and a sorrow to others. Google Search Engine vs Bing by Microsoft is about to become the biggest rivalry, which will be very exciting for people (Reuters, 2023).

For Internet companies, the future development direction may be changed, Google's familiarity with end users will help them get this product to those users. It has also been said that Microsoft will add ChatGPT to its "Bing" search engine (SEJ SEO, 2023).

(6) Legal

Google is caught up in antitrust laws in several countries. Russia has also repeatedly slapped it with antitrust sanctions. Regulators said Google could face fines totaling of between one and 15 percent of its 2014 revenue in Russia and could be subject to more if violations continue (Goovaerts, Diana, 2016).

Google has filed its own appeal against the still-record-breaking €2.42 billion (around £2.18 billion) fine it received from the General Court over its own alleged anti-competitive practices (Gareth Halfacree, 2017).

America slapped it with antitrust sanctions, the U.S. Department of Justice with 11 state attorneys general, it has filed an antitrust complaint against Google LLC for allegedly(Stanton Lynn, 2020).

Google has paid a fine of 700,000 rubles (about 10,900 U.S. dollars) for failing to remove all search links to banned information, Russia's telecoms watchdog Roskomnadzor said Friday(Yan, 2019). So far, Google appears to be on the wrong side of the legal landscape.

4. Conclusion

Google has been a leader in the field of artificial intelligence, whether it's in machine learning, natural language processing or image recognition, where it's at the forefront of the technology. In recent years, Google has also launched a series of AI products and services, such as Google Assistant and Google Home, making artificial intelligence and smart home more and more popular. Google has been a leader in the field of artificial intelligence, whether it's in machine learning, natural language processing or image recognition, where it's at the forefront of the technology. In recent years, Google has also launched a series of AI products and services, such as Google Assistant and Google Home, making artificial intelligence and smart home more and more popular.

At the same time, Google Cloud is one of the world's leading cloud computing technology providers, ranking alongside AWS and Microsoft Azure as three cloud computing giants. In recent years, Google Cloud has been accelerating the construction of data centers and network infrastructure around the world to meet the growing needs of customers in various industries. In addition, Google Cloud has also launched a series of solutions in the military, medical, government and other fields to provide customers with more comprehensive and accurate cloud computing services. Google Cloud has also spent billions of dollars acquiring a string of cloud-computing startups, notably CloudSimple, which makes it easy for Google Cloud customers to move VMware workloads from on-premises data centers to the public cloud. In addition, Google Cloud has further boosted the AI capabilities of its cloud platform by acquiring Cerebras, Fiddler Labs, Graphcore, Supervisely and other AI chip and algorithm related startups.

Through heavy attacks on products, technology, capital and other fields, Google Cloud has gradually gained the strength to fight Google, Microsoft and other competitors, and its revenue scale has also maintained a high growth rate. For a long time, search engines in most parts of the world (except China, Russia and other countries) are in a monopoly position. In the United States, for example, Google accounts for 81 percent of desktop searches and 94 percent of mobile searches, while Bing and Yahoo only hold single-digit market shares.

At the same time, Google has also built an extensive matrix of Search ads through products like Google Search, Google Play, Map, Gmail, and Google Search ads have also been the top choice for advertisers. But with the global macroeconomic downturn and the rise of short-video platforms such as TikTok, Google's search ads are under increasing pressure. Especially since the second half of last year, the willingness of advertisers to reduce.

YouTube has been one of Google's strongest AD growth engines over the past few years, especially as it has played a role in filling in the gap between search ads and feed ads.

However, under the influence of adverse factors such as increasing competition in the industry and Apple's IDFA policy, the pressure on YouTube's advertising business is also increasing. Google advertising decline is inevitable.

Google has become one of the representatives of global companies, and its products and services have covered the whole world. Google has a large number of research and development centers, data centers, offices and employees around the world, which help it better understand the needs of users in different regions and develop products and services that better meet local needs. In addition, Google has partnerships with companies and institutions around the world to advance technology and society. To sum up, Google's strength is not only reflected in its search engine and products and services, but also in its technological strength, data strength, brand

strength, cultural strength and globalization strength. These strengths are important factors for Google's success, and also important guarantees for Google's future development.

5.Reference

Andrejevic, M. (2006). The Discipline of Watching: Detection, Risk, and Lateral Surveillance. *Critical Studies in Media Communication*, 23(5), pp.391-407.

Bobbie Johnson, (2006), 'The question: does France really need its own search engine?', *The Guardian*, April 24th.

Callahan J, (2018), Google made its best acquisition 13 years ago: Can you guess what it was? *Android Authority*, [Online] Available: <https://www.androidauthority.com/google-android-acquisition-884194/>. Accessed 2018, January 10th.

Casey Ross, (2020), Google develops AI to identify patients at high risk of blindness, *STAT*, Boston.

Dani N.(2022), 'The 2021 Amazon Consumer Behavior Report:Based on a Survey of 2,000+ U.S. Shoppers', [Online] Available: [feedvisor.com/platform](https://www.feedvisor.com/platform/), Accessed 2022.

Dani N.(2022), 'The 2021 Amazon Consumer Behavior Report:Based on a Survey of 2,000+ U.S. Shoppers', [Online] Available: [feedvisor.com/platform](https://www.feedvisor.com/platform/), Accessed 2022.

Debra Aho Williamson, (2023), 'Social Search Is Taking Off How Advertisers Can Benefit as TikTok, Instagram, and Snapchat Take On Google' [Online] Available:

<https://www.insiderintelligence.com/content/social-search-taking-off>. Accessed

2023, Jun 14th.

Deborah Fallows, (2005), Search Engine Users, Pew Internet & American Life Project,

[Online] Available: <http://www.pewinternet.org>, Accessed 2006, August 23th.

Ehsan Jahandarpour , (2016), 'The Secret Behind Google's Success: Case study on

Google Business Model Based on Business Model Canvas', CARSON DERROW.

[Online] Available:

<https://www.entreneurshiplife.com/secret-behind-googles-success/>, MARCH 25.

Farhan Bashir Shaikh & Sajjad Haider, (2011). Security Threats in Cloud Computing,

'2011 International Conference for Internet Technology and Secured Transactions', IEEE.

Finley, K, (2019), 'Why Google Would Drop \$2.6 Billion on an Analytics

Company.' [Online] Available: <https://www.wired.com/story/google-drops-26-billion-analytics-company/>. Wired, 6, June, Accessed 2020, September 26th.

Gartenberg, C, (2019), 'Google buys Fitbit for \$2.1 billion,' [Online]

Available: <https://www.theverge.com/2019/11/1/20943318/google-fitbit-acquisition-fitness-tracker-announcement>. The Verge, 1st, Accessed 2021, November, 24th.

Gareth Halfacree, (2017), 'Google files appeal over £2.18 billion EU antitrust fine,'

[Online] Available: <https://www.bit-tech.net/news/tech/software/google-files-appeal-over-218-billion-eu-antitrust-fine/1/>. Accessed 2021.

Google, (2006), 'Google to Acquire YouTube for \$1.65 Billion in Stock. Google Press.'

[Online]

- Available:http://www.google.com/intl/en/press/pressrel/google_youtube.html. Accessed 2021.
- Goldstein, P. (2023) Fierce Wireless, [Online] Available: <http://www.fiercewireless.com/story/political-issues-spying-concerns-could-drag-googles-project-loon/2013-06-24>. Accessed 2023.
- Google,(2006), 'Technology Overview', [Online] Available: <http://www.google.com/corporate/tech.html>, Accessed 2006, June 20th.
- Google, (2011), Product Descriptions. Google Press. [Online] Available: <http://www.google.com/intl/en/about/corporate/company/>, Accessed 2021.
- Goovaerts, Diana, (2016), Google Loses Appeal in Android-Related Russian Anti-Monopoly Case, Radnor , (Mar 14, 2016): n/a.
- Global Technology Service, (2022), Digital transformation on the cloud, China Machine Press.
- Huan Qiu, (2010), China's Foreign Ministry said on the Google incident that Chinese cultural traditions should be respected. [Online] Available: <https://m.huanqiu.com/article/9CaKrnJmUo8/>, Accessed 2010, January 1st.
- Jay Yarow, (2013), "Steve Ballmer's Huge Reorg of Microsoft Could Bury One of the Company's Biggest Embarrassments" , Business Insider, July 9th.
- Introna L& Nissenbaum, H, (2000), Shaping the Web: Why the politics of search engines matters. The information society. v. 16, n. 2.
- Johnson, B. (2010). 100 Leading Media Companies. Advertising Age, [Online] Available: http://adage.com/mediaworks/article?article_id=146004. Accessed 2010.

Karpinski, Rich, (2007), Google integrates mobile, Web text ads. Penton Media, Inc., Penton Business Media, Inc. and their subsidiaries.

Luo Yaozong, (2005), Google: Seven Lessons of Google's Success, Beijing, Publishing House of Electronics Industry.

Market research report, 'markets and markets,' [Online]
Available:<https://www.marketsandmarkets.com/Market-Reports/artificial-intelligence-market-74851580.html>. report code: TC 7894, Accessed 2021, May.

Matt Binder, (2023), 'All the AI announcements from Google I/O 2023', Move over, Android. Google is an "AI-first" company now. [Online] Available:
<https://mashable.com/article/google-io-2023-everything-you-need-to-know-ai>,
Accessed 2023, May 10th.

Maedche A, Morana S, Schacht S, Werth D, Krumeich J,(2016), Advanced user assistance systems. Bus Inf Syst Eng 58(5):367–370.
<https://doi.org/10.1007/s12599-016-0444-2>,Accessed 2016.

Maedche, Alexander,et al, (2019), AI-Based Digital Assistants, Business & Information Systems Engineering, Vol. 61, pp.535–544.

Md. Saidur Rahaman, (2023), The AI Race is on! Google's Bard and OpenAI's ChatGPT Head to Head: An Opinion Article, papers.ssrn.com, [Online] Available:
<https://www.researchgate.net/publication/368369369>, Accessed 2023,January.

Morgan Stanley, 2009, "The Mobile Internet Report", See, [Online] Available:
<http://bit.ly/4JJDq4>, Accessed 2011,Jun 14th.

Pasquale F, (2015), The black box society. Boston: Harvard University Press.

Reuters (2015) [Online] Available:
<http://www.reuters.com/article/2010/03/21/us-china-google-media-idUSTRE62K0A120100321>, Accessed 2015.

Reuters (2023), Google unveils ChatGPT rival Bard, AI search plans in battle with Microsoft, The Business Standard, [Online] Available:
<https://www.tbsnews.net/tech/google-unveils-chatgpt-rival-bardai-search-plans-battle-microsoft-581138>, Accessed 2023.

Richard Whittington et al, (2019), Exploring Strategy, Text and Cases, (Twelve Edition), Pearson Higher Education & Professional Group.

Robert W. McChesney, 'The New Global Media', in David Held & Anthony McGrew (eds), The Global Transformations Reader: An Introduction to the Globalization Debate, 2nd edn (Polity, 2002), p. 260.

Subrahmanian, V.S., (2021), The golden age of Artificial Intelligence. Discov Artif Intell. [Online] Available:<https://doi.org/10.1007/s44163-021-00009-x>. 1:1, Accessed 2021.

Slefo, Georges, (2016), 'GOOGLE REVS UP MOBILE WEB, BUT WHAT ABOUT MARKETERS?' Advertising Age Chicago, Vol. 87, Iss. 4.

Sunilkumar, S., Manvi & Gopal, Krishna, Shyam, (2014), Sunilkumar S. Manvi & Gopal Krishna Shyam, 2014, Journal of Network and Computer Applications, Volume 41, May 2014, Pages 424-440.

Stanton, Lynn, (2020), DoJ, 11 State AGs File Antitrust Lawsuit Against Google; Other States Weigh Options, Telecommunications Reports, Washington Vol. 86, Iss. 19,1 , pp.28-30.

Sergey Brin & Larry Page, (1998), 'The Anatomy of a Large-Scale Hypertextual Web Search Engine', Computer Networks, Vol. 30, Nos 1-7, [Online] Available: <http://www-db.stanford.edu/backrub/google.html>, Accessed 1998, August 24th.

See Susan Strange, (1996), The Retreat of the State: The Diffusion of Power in the World Economy, Cambridge University Press.

SEJ · SEO (2023), Microsoft Announces ChatGPT Capabilities Coming To Bing, SEARCH ENGINE JOURNAL, [Online] Available: <https://www.searchenginejournal.com/microsoft-announceschatgpt-capabilities-coming-to-bing/478803/#close>, Accessed 2023.

Steven Hodson, (2008), "What Is Cloud Computing?", [Online] Available: <http://www.winextra.com/2008/05/02/what-is-cloud-computing>, Accessed 2008, May 2nd.

Sundar Pichai, (2018) , AI at Google: our principles, [Online] Available: <https://www.blog.google/technology/ai/ai-principles/>, Accessed 2020, December 22st.

Luo Zhiguo & Yujian Du& Ling Qian&Leitao Guo, (2009), Cloud Computing: An Overview, Lecture Notes in Computer Science, LNCS 5931, pp. 626–631.

Yan, (2019), 'Russia fines Google over search results linked to banned information'. [Online] Available:

http://www.xinhuanet.com/english/2019-09/13/c_138389967.htm,Xinhua,Accessed 2023.

Yubin Liu, (2018), Application research of artificial intelligence in network technology [J]. Computer Fan,2018(2):176.

Tech review Africa, (2023), 'Google to cut 12,000 jobs to reduce workforce'.[Online] Available:<https://myjoyonline.com/google-to-cut-12000-jobs-to-reduce-workforce/>, Accessed 2023, Jan 21th.

Vincent J, (2020), 'Google's \$2.1 billion Fitbit acquisition is getting closer scrutiny from EU regulators.' [Online] Available: <https://www.theverge.com/2020/7/3/21312383/google-fibit-acquisition-antitrust-data-regulatory-eu-scrutiny>. The Verge, 3, July. Accessed 2020 September 24th.