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Comparative analysis of two tech giants under the financial perspective: Microsoft versus Alphabet

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ABSTRACT

This paper provides a comparison of two key players in the IT industry, Microsoft and Alphabet, from a financial point of view. After analysing the IT industry and introducing the main theoretical concepts of the paper, the study gives a general overview of the two tech giants and compares their business models focusing on how they create and capture value. Furthermore, the case study includes a calculation of financial ratios using secondary data and explains the effect of the Coronavirus pandemic on the companies' financial performance. Finally, their capital structure and their alleged anti-competitive actions are discussed, outlining two court cases of great importance and their consequences on stock prices.

Keywords: Microsoft, Alphabet, financial analysis, business model, monopolistic behaviour

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1. INTRODUCTION

Alphabet, formerly known as Google, entered the information technology (IT) industry in 1998 with its incredibly innovative search engine and ruled the market for many years, while the now justly famous Microsoft was only in its infancy. Between 1998 and 2004, when the firm went public, the value of Microsoft's stock was not even close to Google's which was at $80 billion. At that time, no one would have thought that Microsoft will be one of the most threatening competitors of Alphabet. Microsoft's primary focus was a PC operating system and other software solutions that were unrelated to Google's main activity. The question arises, where is the conflict of interest? What has happened in recent years and why these two giants are racing constantly neck to neck for market share?

Although not from the very beginning, and not even in the main product lines, one could still say that the rivalry started a long time ago. The first case that comes to mind is the battle for mail and instant messaging services, starting from 2012. Hotmail and Gmail were the two most widely used applications, and the rivalry has not abated. To remain competitive, Hotmail was restructured and renamed as Outlook, making it a more sophisticated mail service provider that is capable of fighting back. Gmail is still the market leader with its popular design and user-friendly interface; however, Outlook is often preferred in B2B purchases. Furthermore, Alphabet decided to compete with the Microsoft office applications, a move that only a few expected. They created an innovative web-based software, which is called Google Docs. Users can reach all the same features of the office applications (PowerPoint, Word, Excel etc.), but without the need of downloading anything. The program provides access to the documents from every part of the world, making it faster and easier to work with. These examples explain that in this never-ending race, Microsoft and Alphabet are continuously having conflicting interests and have become direct competitors in many areas. The competition is heating up on several fronts, but both sides remain powerful, and it appears that the situation will be the same in the coming years.

The intense rivalry and the strength of these tech giants are the two main reasons why an analysis and financial comparison of the two players could lead to valuable findings. Analysing the financial statements of Alphabet and Microsoft led to a better understanding of their financial position and their ability to tackle the consequences of a world crisis caused by the Coronavirus pandemic. The paper describes the capital structure of companies and explores the literature written in the topic. The objective of the financial analysis is not just to analyse the numbers, but to identify the key differences in their capital structure and their approach to debt financing. Furthermore, the case study sheds light on the dissimilarities of the two companies' business models and digs into the most influential antitrust lawsuits that the companies face for allegedly abusing monopoly power. This is in line with the 8th United Nation Development Goal of decent work and economic growth focusing on sound economic policies, solid democratic institutions responsive to the needs of the people.

2. INDUSTRY DESCRIPTION AND ANALYSIS

2.1. Introduction to the information technology industry

The Information Technology industry is considered one of today's most dominant and fastest-growing industries in the world. Technology helps people and businesses solve everyday problems, providing a range of simplifications and conveniences, and the potential for continuous improvement and innovation. The rise of the IT industry took place in the beginning of the 21st century and it has emerged as a sector that stands out from the rest. Technology companies - or tech firms - include a wide range of players, including companies with a wide variety of profiles, both in terms of size and core activities. (Lee, 2012) To accurately classify technology companies, several aspects need to be considered. Primarily, tech companies are associated with the development or production of software and hardware solutions or internet-related services. In addition, technology companies have already entered the financial sector, fintech companies are seen as new competitors to banks, and the future role of cryptocurrencies is also a matter of debate (Feyen et al., 2021). Tech companies are characterised by a high degree of innovation, strong research and development activity, and often have their headquarters in close proximity to each other, for example in Silicon Valley in California, one of the information technology hubs of the US.

2.2. Industry analysis using Porter's 5 forces framework

The five forces framework for analysing industries was developed by Michael Porter, a strategy professor at Harvard University. It is often defined as the basics of the industry-based view of strategy. The framework consists of the forces that affect firm performance and thus the financial prospects of a potential entrant into an industry. (Diane, 2020) Outside analysts and companies can have a better grasp at the competitiveness of the industry and are able to evaluate its underlying business potential. The more intense and dominant these forces are, the less likely a new entrant will be successful in competing with the industry's incumbents. (Peng, 2009) In this chapter, the study explains the different forces of the framework and then applies them to the IT industry.

2.2.1. Threat of new entrants

Many companies desire to enter a lucrative (high yield) market. As a result, attractive industries are often flooded with new entrants which reduces profitability (more firms for the same return). Following entry by competitors, market share can be expected to decrease, prices to decrease, and fixed and variable costs to increase. (Mukherjee, 2018)

In this case, the threat is low. It is challenging to enter the technology industry as it is ruled by a few, but extremely powerful companies and by heavy barriers to entry. Large capital expenditures, market knowledge, innovativeness, and many more competitive attributes are needed to overcome these barriers and to fight against the incumbents of the industry. R&D investments are especially important for technology companies, as it is the source of innovation to withstand competition. Alphabet and Microsoft are both among the companies that have the highest R&D expenditures.

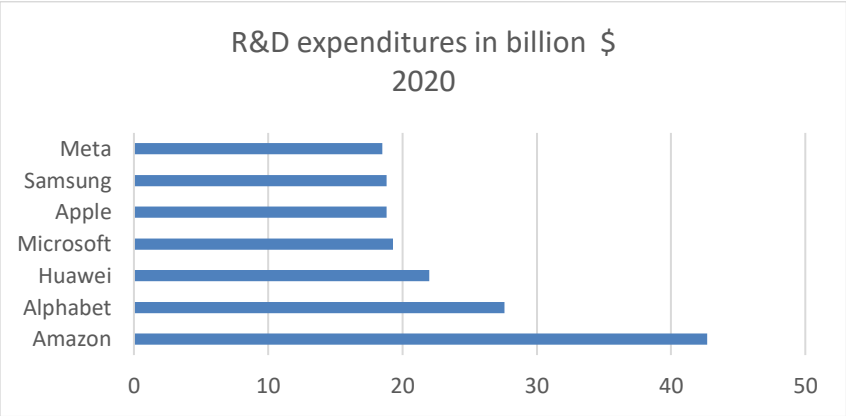

Figure 1.

Companies with the highest R&D investment expenditures in 2020 (in billion U.S. dollars)

Source: Statista, Research and Development Worldwide

Alphabet's philosophy was the same from the very beginning, investing in promising ideas that often carry high risk as well. That is the reason why the company spent $27.6 billion on R&D in 2020 and $31.6 in 2021. The amount spent in 2021 is the 12.3% of the total revenue of Alphabet and is a $4 billion increase compared to 2020. The increase in R&D spending is due to an increase in the headcount that led to higher compensation expenses (Alphabet annual report, 2021). Microsoft has a similar approach to R&D spending, they focus on improving different business processes, developing the cloud platform, and creating a more personal experience for users. In contrast to Alphabet, they allocate a steady amount, about 13% of their total revenue for R&D investments, spending $19.3 billion in 2020 and $20.7 billion in 2021 (Nasdaq, 2021).

Moreover, the incumbents of the IT industry enjoy the scale and non-scale-based advantages as well, such as their hard-to-imitate technological solutions. The industry is filled with differentiated product offerings, leaving almost no place for unmet demand. (Peng, 2009) In conclusion, Microsoft and Alphabet do not have to be afraid of dangerous new entrants but they should be alert to the moves made by existing rivals.

2.2.2. Bargaining power of suppliers

Suppliers are responsible, among other things, for the raw materials and parts used in production, but in the case of the service industry, labour and other service providers must be taken into account as well (consultants, etc.) They can all be in a bargaining position with the company if there are only a few dominant alternatives, or suppliers provide undifferentiated products. Suppliers can dictate the relationship by setting high prices, intentionally worsening performance, or even refusing to cooperate. (Porter, 1979)

High. The power of suppliers heavily depends on the goods or services supplied. The manufacturing of technological products requires both complicated and high-quality inputs from suppliers, and insignificant ones as well. Therefore, the power of suppliers of non-strategic parts is low, as there are hundreds of companies competing to provide these goods. On the other hand, the global chip crisis showed the world how important strategic suppliers are for technological companies. Both companies are involved, however, Microsoft is more affected due to its Xbox series. All in all, considering the bargaining power of strategic suppliers, the force is strong, since tech companies are extremely dependent on these superior inputs.

2.2.3. Bargaining power of buyers

The bargaining power of buyers refers to the ability of a buyer to put pressure on the firm to achieve its objectives, for example, to reduce prices. In industries where there are only a handful of buyers, the bargaining power is high. A great example of that is the automobile industry, where hundreds of suppliers are trying to sell to a few car manufacturers, thus buyers are able to achieve price concessions. (Peng, 2009)

High. The paper mentioned previously that in this industry there are just a few exceptionally powerful players. As a result, buyers have fewer opportunities to go from one company to another if they are left unsatisfied. There are two categories of buyers in this case: big corporations, governments, and the less influential players: SMEs and other lower-end buyers. Reputation is increasingly important in this sector as upper-end buyers lay huge emphasis on choosing a tech company to buy from. (Lessambo, 2018)

2.2.4. Threat of substitute products

Substitutes are products that can provide a similar value, only from a different category or even from an entirely different industry. As an example, claiming that Pepsi is a substitute product for Coca-Cola would be wrong, however, a tea or coffee brand can be and is often chosen by consumers instead of Pepsi. (Peng, 2009)

Moderate. The players in this industry are constantly investing a lot of money in research and development and they try to come up with competitive substitute products to beat their rivals. Both Microsoft and Alphabet must face substitute products in the market, mainly from the same sector. If these alternatives appear in the market, they will be developed by either themselves or by their competitor. Their product offerings are so differentiated that products from other industries are less likely to replace them. (Lessambo, 2018)

2.2.5. Rivalry among competing firms

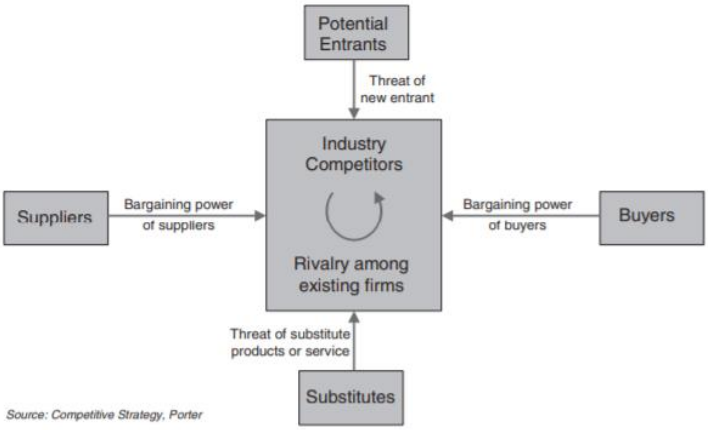

Figure 2. Porter's 5 forces model.
Source: Competitive Strategy, Porter

Table 1 shows that the rivalry among existing firms is the central point of the five forces model. The characteristics of the other forces influence the level of rivalry within the industry (Grundy 2006). There are actions that can be taken by firms to increase competition with the aim of reducing profits for rivals. Companies can start lowering their prices, thus leading to a price war, or heavily invest in advertisement campaigns to gain more market share (Peng,2009). Although the existing level of competition is key, the fact that Michael Porter realised that the attractiveness of an industry is not solely relied on one force is a highly valuable observation for professionals working in the field of strategy (Karagiannopoulos et al.,2005).

High. As explained in the introduction, the rivalry is more intense than ever between the two tech companies, they are battling to be the market leader in the IT industry. From mail services to internet search engines, their products are constantly changing our technologically driven society. Whether this change is going in the right direction is often debated by professionals, with many ethical dilemmas to consider.

3. HOW TO DEFINE BUSINESS MODELS?

This section of the paper introduces the concept of business models and discusses the reasons why organizations fail to implement them successfully. Furthermore, it explains the differences between strategy, business models, and tactics using the generic two-stage competitive process framework.

According to a study by the IBM institute of Business (Global CEO study), the upper management of multinational enterprises places great emphasis on the innovativeness of their business models (Casadesus-Masanell & Ricart, 2010). The applied models are continuously changing, as companies are trying to develop and modify them to improve their financial performance and capture competitive advantages. But what is essentially a business model? There are many different opinions among professionals, as there is no agreement on an exact definition.

For the sake of clarity, this paper adopts the following definition: a business model is basically the combination of management choices and their consequences (Baden-Fuller et al., 2010). To put it more simply, an organization's business model integrates all the decisions made by its management executives on how the company should operate and all these decisions have consequences for the process of value creation and value capture that underpin the business. Consequences can be sorted into two main categories: flexible and rigid consequences. In the case of flexible consequences, the dependence on the choice prior to it is high. As an example, the paper uses Ryanair's model which is one of the most notorious business models in the 21st century. They chose to be a cost leader in the airline industry resulting in high sales volumes. If they changed their policy of low prices to concentrate on differentiation, evidently the sales volume would go down rapidly. In contrast, rigid consequences are hardly influenced by the choices that create them. (Harvard Business Review, 2011)

Why do firms fail to design successful business models?

Despite the interest in business models, many firms still fail to develop ones that provide sustainable competitive advantages to them. The reason is that they neglect other forces affecting their model, developing, and evaluating them in isolation. This is where an industry analysis is essential and helps executives to throw light on the characteristics of the given industry. Moreover, companies do not realise the opportunity in embedding virtuous cycles into their business models, which would result in gradually increasing benefits. (Harvard Business Review, 2011). This process is often misunderstood by management, considering it as strategy or tactics, but the reality is, that this is neither of the two. This is about strengthening the company's virtuous cycles in a way that it could lead to a competitive advantage over an organization's rivals (Casadesus-Masanell & Ricart, 2010).

3.1. Differences between business models, strategy, and tactics

Understanding the difference between the strategy, tactics, and business model is key for all future leaders. One of the reasons behind the inexistence of the characteristics of a superior business model among the academists is the lack of clear separation of the three concepts. The business model refers to the operating decisions of executives and their consequences described above, while strategy could be described as the choice of the business model with the aim of competing in an industry. Additionally, tactics refer to the remaining open options to a company based on the business model it has chosen. The following framework displays the relation between the three.

Figure 3. Generic two-stage competitive process framework.
Source: Casadesus-Masanell & Ricart 2010.

Essentially, the business model is the body of strategy which consequently determines the feasible tactical movements that an organization can implement, to compete or to cooperate with other rivals in the market. The more obvious part of this concept is how the business model differs from tactics, however, the distinction between strategy and the business model requires further explanations. According to Ramon Casadesus-Masanell and Joan Enric Ricart, every organization makes choices in the course of its operations, and every choice brings a consequence about. There is no exception. On the other hand, not every company has a strategy which is a plan of action designed for the business environment. A perfect way of simplifying this concept is using an analogy of car manufacturing. The building and design of the car are the strategies, the car itself is the business model and tactics is the way of driving the car. Before getting into the driver's seat, the owner of the car has the choice to modify its features and components. Such adjustments would be considered as the "strategic actions" applied to the car, which is essentially the business model in this case.

3.2. Digital Business Models

After explaining the characteristics of business models in general, the paper delves deeper into a more specific branch of these models. In the last decades, the Internet economy has developed, and online/digital businesses have conquered the world. Since both companies in question are e-businesses, it is crucial to first define what this means. The following definition is from Wirtz (2000): "E-business is the initiation as well as the partial or full support, transaction and maintenance of service exchange processes between economic partners through information technology (electronic networks)."

The digital revolution and the rise of online businesses introduced the concept of digital business models. For a deeper understanding of the digital business models, the paper describes a typology designed for the B2C industry. The typology is called the 4C-Net business model, which provides a base for differentiation from a theoretical point of view. According to Wirtz (2019), the 4C-Net business model can be divided into 4 segments: content, commerce, context, and connection.

The content business model is about visualizing, making information understandable, and above all, accessible for users. A good example is Wikipedia, where internet users can have access to and read about almost anything they want. The commerce model is probably the most straightforward one, it is developed to help the initiation and settlement of online transactions. The commerce model is increasingly successful in today's world, as the Coronavirus pandemic motivates internet surfers to buy more things online, using for example eBay or Amazon. The context business model concentrates on the categorization, organization, and systemization of available information online. The most popular example is Google, but Microsoft is in the race too with Bing. In contrast to the content business model, the context providers are not focused on the creation of content but rather function as an online navigator. The fourth type of digital business model is the connection business model. The main goal of this model is to eliminate the incredibly high transaction costs of interaction between people in the digital network. In reality, the communication process would hit many barriers along the way, and each obstacle would come with rising costs. A good example would be LinkedIn, where professionals can exchange information without the need of involving a third party. (Wirtz, 2019)

3.3. Hybrid business models

Although organizations are focusing on only one type of business model, nowadays it is more likely to encounter the so-called hybrid business models. When a company applies two or more types from the typology, one can define the phenomenon as a hybrid/multifunctional business model. The following figure visualizes how the different models can be categorized.

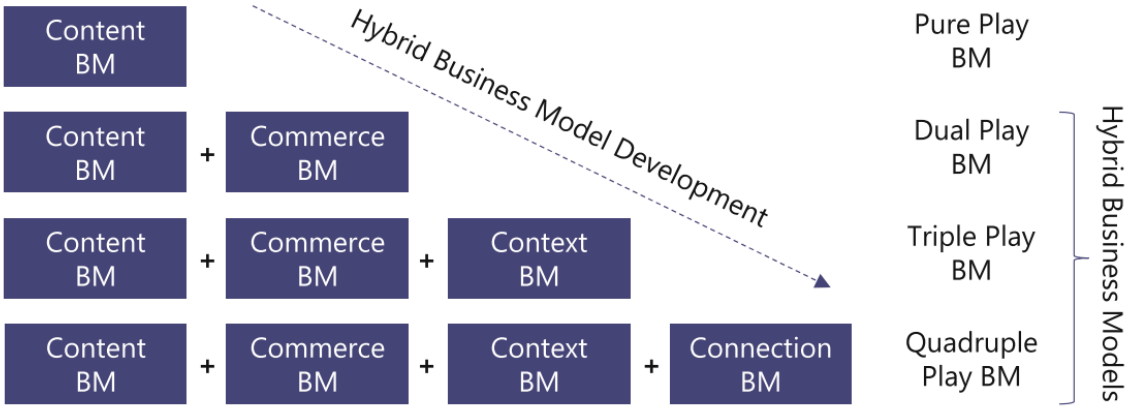

Figure 4. Hybrid Business Models.
Source: Wirtz and Daiser (2015), Wirtz (2018b)

Hybrid business models are advantageous from both the customer's and the provider's point of view. For customers, it is more convenient to access information and use services if it is offered on one single website, hence saving them timeless internet browsing. At the same time, the development of hybrid business models offers cost benefits for the service providers. The reason behind is the cost savings from economies of scale. Most expenses of setting up an internet-based business would occur at the initial, starting stage of the project. Once the e-business is ready to run, maintenance and upgrading costs will be much lower than the fixed costs. This is when the advantages of economies of scale enter into the equation. The higher the proportion of the fixed costs in a company's cost structure, the more benefits it could realise from economies of scale. It simply means that digital service providers with a hybrid business model are able to offer a larger range of e-services, thus distributing the initial fixed costs over each provided service. (Wirtz, 2019)

3.4. Monopolistic Behaviour

The analysis of the two technological giants would not be complete without examining their monopolistic behaviour in the industry. Microsoft has always been in the spotlight regarding anti-competitive behaviour. "Microeconomic theory suggests that monopolies harm society by extracting excess profits from consumers with inelastic demand curves and creating a deadweight loss for those consumers priced out and required to find a lesser substitute" (Eric, 2018). Exhibiting dominant power can be characterised by profit-maximizing and the ability to discriminate prices. Earlier, this study defined that the barriers to entry are high in the IT industry, which also provides a good foundation for anti-competitive behaviour.

It may seem logical that influential firms have decreasing interest in being socially responsible and ethical, the results of Eric Tichbourne's (2018) study suggest the exact

opposite. He explains that monopoly power and imperfect competition can influence positively a company's action regarding social responsibility, adding that single monopolies may still result in hurting the industry players. Microsoft and Alphabet have a history of displaying dominance and getting sued for damaging the market dynamics, which makes the subject even more intriguing for the second half of the paper.

4. OPTIMAL CAPITAL STRUCTURE

One of the most debated questions in corporate finance is around the capital structure of a firm. The choice and combination of debt and equity financing are of paramount importance that drive financial performance and value. The theory of Modigliani and Miller (1958) was the first to address whether the value of an organization depends on the ratio of debt and equity financing. Their conclusion was basically that firm value is not affected by its capital structure, although the model was developed under many unrealistic assumptions. For instance, the assumption of no taxation made the theory groundless in the real world. That is the reason why in 1963 Modigliani and Miller came up with a more accurate model, where they applied taxation in calculating the optimal capital structure. This is when the concept of tax benefit of debt financing was born. As the interest on debt is deducted from the income of the firm, debt financing results in a decrease in the tax payable and thus it is considered cheaper than equity financing. It meant that adding debt to a certain extent leads to benefits as it lowers the weighted average cost of capital (WACC) because of the tax shield. The question is: is there an optimal capital structure of financing? In the next part, I introduce two theories that try to address this question: The trade-off theory and the Pecking order theory.

4.1. Trade-off theory

According to Myers (1984), the optimal capital structure derives from the right balance of the tax benefits of debt financing and the cost of bankruptcy or financial distress. There are many debates on how much value is really created by these tax advantages and where to draw the line. As claimed by Fama & French (2002), the two sides of the trade-off theory are the rising probability of bankruptcy costs and the benefit of debt reducing the agency costs of free cash flow. Owners are pushing to use less average, in order to avoid the rising probability of bankruptcy costs, but at the same time increasing debt puts more pressure on the management and less cash into their hands, thus decreasing the chance of the principal-agent conflicts. To dig deeper into the trade-off theory, the concept of bankruptcy costs must be explained. There are two kinds of costs related to bankruptcy: direct and indirect. Direct costs are the fees of lawyers, management, and other professionals involved in the process, while indirect costs are related to the decrease in profitability (Jerold, 1977). The volatility of the net income and the decreasing profitability of a firm increase the probability of both direct and indirect bankruptcy costs, which should drive the organization towards less target leverage (Fama & French, 2002).

Taxes are also an essential part of the trade-off theory. A model by DeAngelo and Masulis (1980) emphasizes the importance of the correlation between the tax shield and the tax rate a corporation faces. The more profitable and the less volatile a firm is, the higher its corporate tax rate will be, as calculated by the government. It means that the highly profitable companies benefit the most from the tax shield of debt financing, thus leading them towards applying a higher rate of debt in their capital structure. In sum, the trade-off theory is about finding the

optimal capital structure, finding the point until the benefits of the deductible interest payments reducing taxable income outweigh the costs of financial distress. (Abeywardhana, 2017)

4.2. Pecking order theory

In 1961, Donaldson laid the foundations of the pecking order theory. He claimed that firms in need of financing prefer to support their activities from internally generated funds rather than raising external funds. The theory suggests that companies first turn to internally available financing, and only consider debt and equity financing as their second choice. To be even more accurate, the theory states that equity financing is the last financing option that a firm is going to exploit. A more up-to-date study by All-Tally (2014) confirms the theory claiming that internal financing is the most preferred and equity financing is the least. Myers (2001) found out that firms without existing investment opportunities will reinvest the money into the firm, thus avoiding the need for external financing in the future.

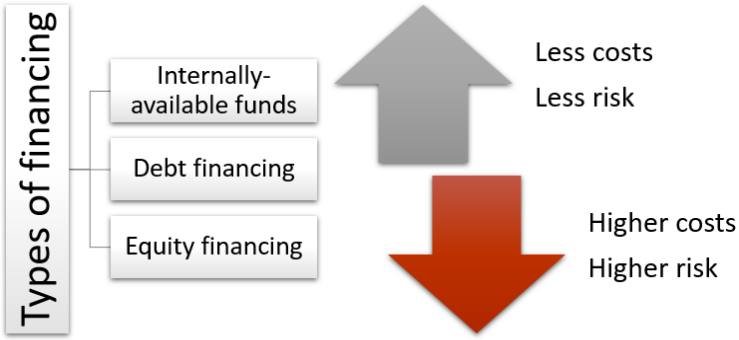

Figure 5. Pecking order theory.
Source: Own elaboration

Myers and Majluf (1984) explained why this phenomenon occurs, and why there is a pecking order of financing. It is mainly because of information asymmetry, meaning that outside investors and the management may have different insights about the financial performance of the company. This information asymmetry may lead to a mispricing of the firm's equity, hence making equity financing more profitable for new investors (having a higher NPV of the project) than for existing ones. The lower NPV for existing investors makes the project impossible to implement. On the other hand, a choice without undervaluation would make the project feasible, and that is when debt and internal funds come into the picture.

5. METHODOLOGY

The next part of the study introduces the methodology applied and the sources of the information processed to financially analyse and compare the two corporations. The most frequently used method of developing a reasonable understanding of the financial performance of an organization is called financial analysis. Financial analysis helps stakeholders to make profitable decisions and can provide important information to credit institutions when borrowing. It is essential for the functioning of a market economy that market participants have access to objective information on the assets, liabilities, financial position, and profitability of a firm. Financial analysis can be used to analyse transactions, investment opportunities, and to evaluate projects or even whole businesses (Friedlob et al., 2003).

5.1. Secondary data collection – Financial statements

Secondary data analysis is based on existing information available to the researcher, who was not part of the collection of the primary data (Russel, 2001). A perfect example of secondary data is the financial statements, as it is obligatory for public companies to periodically collect and publish their statements under the GAAP (generally accepted accounting principles) in the US. (Boslaugh, 2007). What is the definition and purpose of these documents? An accurate definition would be:" Financial statements are the principal means through which a company communicates its financial information to those outside" (Wiley, 2018). These statements tell a story about the history of the company in numbers. The four most important financial statements are: (1) balance sheet, (2) income statement (or comprehensive income statement), (3) cash flow statements, and (4) statement of changes in equity (Wiley, 2018). This study only focuses on the first three ones, leaving out the statement of changes in equity.

Balance sheet:

A balance sheet is a financial statement that reports the assets, liabilities, and shareholder's equity of an enterprise at a given date, properly valued, summarised in monetary terms, and presented in a predefined structure. The difference between the assets and liabilities represents the amount of shareholder's equity. The three parts together define the so-called accounting equation: Assets= liabilities + shareholder's equity (Robinson et al., 2009).

Income statement:

"The income statement presents information on the financial results of a company' s business activities over a period of time" (Robinson et al.,2009). It reports how much revenue/sales a company reported during its financial year and deducts the expenses that occurred. The last line

of the income statement is the net income from which a company can pay dividends or reinvest it as retained earnings. Banks and other multinational enterprises often have to prepare a comprehensive income statement, where income from discontinued operations, extraordinary items, and other comprehensive income is reported.

Cash flow statement

Although the cash flow statement is not often mentioned at the same level as the first two financial statements, a company's cash flow is of paramount importance. It helps investors or any statement user to examine the cash inflows and outflows, thus having a clearer picture of the liquidity, solvency, and financial flexibility of an organization (Foster, 1986). The cash flow statement can be broken down into three parts: cash flows from operating, investing, and financial activities. The names speak for themselves, operating activities are related to the day-to-day activities, investing activities to the disposal and acquisition of non-current assets, and financing activities to the changes in capital (Bernstein, 1998).

5.2. Horizontal Analysis

In order to look behind the numbers, there are three widely used tools available for further investigation. One of them is the horizontal analysis of financial statements. The main idea of the horizontal analysis is the evolution of the financial statement lines through the years. For instance, it is mandatory for companies to show the current and the previous year's numbers on the balance sheet, in separate columns. This way, investors can compare the differences between the financial years and recognise a trend in the increasing or decreasing numbers. The readers of the financial statements can identify not just how each item evolved individually but can observe the relationship between the changing items (Lessambo, 2018).

5.3. Vertical Analysis

"Vertical analysis, also known as "common-size analysis," expresses each item of the reported financial statements (statement of income, statement of position, and statement of cash flows) as a percentage of a base amount (i.e., total assets or net sales)" (Lessambo, 2018). This tool enables stakeholders to effectively evaluate and compare companies in the same industry, thus reaching a better understanding of how the selected organization performs relative to its competitors. The base amount differs according to the statement analysed. In the case of the income statement, the net total sales can be applied as the base amount and the total assets regarding the balance sheet. (Robinson et al., 2009)

6. THE CASE STUDY – MICROSOFT VERSUS ALPHABET

6.1. Company overview - Alphabet

Since 2015, Google has been part of the holding company called Alphabet, both companies - which are essentially different in name only – were founded by Larry Page and Sergey Brin. By their admission, they have always tried to make the most of the resources at their disposal, often implementing ideas that seem speculative and crazy. The main reason for the company's success is the search engine used worldwide, as known as Google Search, which helps us find information on any topic by organising the data available on the web. It can quickly and accurately find relevant content based on the keywords or text you are looking for, making it much easier to find missing information. Google has also incorporated a word into everyday language and even into dictionaries (the English word "google", referring to the use of a search engine) (Lee, 2019).

However, Alphabet is not just about its search engine. Their mailing system, Gmail, is used by millions of people every day, Google Drive is for storing and sharing media content and documents, and Google Docs is for editing documents online and sharing them simultaneously. YouTube, also owned by Google, stands out among video-sharing platforms. The company has several other useful products, such as a huge dictionary and even a translator that translates whole passages of text into a choice of languages. Its maps can be used in conjunction with a navigation system, which provides up-to-date information on both roads and traffic (Vise, 2007).

Google is also a major player in smart devices for all walks of life - entertainment, sport, and business - from phones, watches, and TVs to the latest trends in VR glasses and the tools needed to build smart homes with Google Home. The company is a major software developer, with sophisticated technologies that make the former devices easy to use, and devices from other companies also use its developments, such as the Android operating system. Google was one of the pioneers of mobile payments, launching a project called Google Wallet in 2011. All these developments would not have been possible without the right workplace culture. Google has repeatedly been listed as one of the best companies to work for each year - although some have subsequently denied this. Another motivating factor at the company is that employees can spend a fifth of their time working on projects that match their interests, which is how Gmail came about (Vise, 2007).

Google remains the most dominant company under Alphabet, but in the name of transparency, the parts of the company less related to internet services have been separated from it, giving them greater autonomy. Internet-related products and services, such as the Android operating system, YouTube, and Google Search, remained directly part of Google. Other members include Calico, which is active in biotech, DeepMind, venture capital firm GV, X,

and Wing, which are also seen as having great potential by their creators. Alphabet shares, inheriting the codes of the former Google, have remained a heavyweight in the S&P 500 index even after the restructuring. Google's activities are now very diversified, including online advertising, search engine functionality, cloud services, software development, and hardware products. (Lee, 2019)

6.2. Company overview - Microsoft

The company's success story began long before the Internet and the browser era, in the mid-1970s, in 1975 to be precise. Bill Gates and his partner Paul Allen founded their company in that year as Micro-soft (Microsoft from 1976), which was then based in Albuquerque (later moved to Redmond). Their profile was initially to develop and sell BASIC compilers, and they did so successfully. Their software soon became popular and in parallel, an industry-standard, as more and more manufacturers began to use their solution to ensure compatibility with previously developed applications. Their strategy was that contracted manufacturers would provide Microsoft software with their machines, and this solution would ensure profitability in the event of sufficiently high turnover. The company grew quickly, but the real explosion came afterward. (Randall, 1996)

It took the then-infant PC industry and IBM to turn Microsoft into a software giant. From 1981 onwards, the computers produced by the 'Big Blue' were supplied by Gates' company under the alliance (IBM-DOS), and Microsoft retained the right to sell the software, which it did as MS-DOS. Gates saw the potential of PCs perfectly and succeeded in creating compatibility between applications by making a BASIC de facto standard accepted by all market players. The idea was simple: the more people developed their operating system, the more likely they would to be chosen by newcomers, and the more users would not risk choosing an alternative simply because of compatibility. It is therefore a self-exciting process that has resulted in the huge DOS and later Windows-based PC world that forms the installed base of Microsoft, and which has given it a huge advantage in the browser race that followed and helped Bill Gates' company to reach the top and himself to become one of the richest men in the world. As the empire grew, so too did the (software) market space covered by the Redmond giant, and with it the company's dominance (Randall, 1996).

Gates and the other Microsoft leaders developed a strategy that ensured the company could keep pace with others in the fast-changing IT industry. The way the company was organised and managed was to employ well-qualified, mainly young people who knew the business side as well as the technology (the profession), and to organise them into small teams, usually with specific functions, which were closely linked to each other. They focused on mass markets, where they wanted to be pioneers, by creating an organisation that was constantly learning, creative, and based on information sharing. They worked in a relatively formalised way, with three-year planning periods, which was not helped by the hype created by the Internet.

Compared to their rivals, they were much more detailed in their planning, more attentive to the environment, and incomparably better at strategic thinking (Bőgel, 2000).

As Alphabet is not just about its Google search engine, Microsoft is not only its Windows operating system. They entered many different markets among them the videogame industry. Microsoft's Xbox is one of the most popular consoles in the world. In 2020, the company launched its new series of gaming console that will potentially rule the industry for the next decades (Reuters, 2020). At the end of 2021, the market capitalization of Microsoft reached $2.5 trillion, outpacing all the competition. In 2021, the price of Microsoft shares surged by 50%, which could be possibly related to the digital revolution brought about by the Coronavirus pandemic (CNBC, 2021).

6.3. Comparison of Business models

6.3.1. Hybrid Business Model

In this chapter, the paper analyses the business models of the two firms based on the 4C-Net Business Model typology developed by Wirtz (2019).

Context Business Model

As mentioned before, the context business model is about the systemization and gathering of information for internet users. Both companies lay great emphasis on this type of business model, but Alphabet is the obvious market leader with its Google search engine. Already at the beginning of the 21st century, Google had billions of documents available for online consumption. Google search is also one of the most important revenue sources of Alphabet, which will be further explained in the capturing value chapter. Microsoft also entered the race in 2009, when they first launched their search engine, Microsoft Bing, using their own technology. In 2010, the market leader was Google with a 93% market share, while Bing with only 3% (Seymour et al., 2010). By December 2021, Bing's market share increased to 7.2% beating Yahoo!'s 2.77%, but Google was still dominating with its 86% share (Statista, 2022). According to Microsoft, one of the main differences between Bing and Google search is that Microsoft's search engine offers more suggestions for users in the form of drop-down lists, thus making online searching more effective and convenient. Other examples of the context business models are Google Scholar, Google Images, Google Blog Search, Microsoft One Note, and Microsoft Academic.

Content Business Model

The content business model is about the preparation, visualization, and providing of information for cybercitizens. One could immediately think of an example, the justly famous video-sharing platform called YouTube. Like many products of Alphabet and Microsoft, YouTube was also developed externally. Google bought the consumer media company back in 2006, for $1.65 billion in a stock-for-stock transaction according to the original press release (SEC, 2006). At the time, CEO Eric Schmidt made the following statement about the acquisition: "The YouTube team has built an exciting and powerful media platform that complements Google's mission to organize the world's information and make it universally accessible and useful. Together, we are natural partners to offer a compelling media entertainment service to users, content owners, and advertisers." Alphabet realises revenue from YouTube in two separate ways, ads, and YouTube subscriptions. In 2021, YouTube generated almost $29 billion, which is about 10% of total revenues. Although there have been many rumours about Microsoft launching a video-sharing platform, the competitor did not make a step in this direction so far.

On the other side of the coin, Microsoft has a different type of superpower in its hands. They are the market leaders in online gaming, which must be included in the content business model. As discussed earlier, Microsoft acquired Activision Blizzard, a gaming company that took the lead on the list of the biggest acquisitions in Microsoft's history. Alphabet does not participate in this race; Sony Corporation is the true rival. Another example of a content-based application of Microsoft is Bing Maps which is the rival of Google Maps by Alphabet.

Connection Business Model

The connection business model is all about creating a network infrastructure where people are able to communicate without barriers (Wirtz et al., 2010). This model has two subcategories, which are the intra-connection and inter-connection subcategories. The paper focuses on the intra-connection subcategory as both Alphabet and Microsoft have invested more into this type of business model. On the intra-connection level, firms offer virtual infrastructure enabling online communication, such as emailing or instant messaging.

Providing email services is in the wheelhouse of both companies and the race to increase market share is increasingly difficult. Emailing has become a part of everybody's life, it does not matter whether you are at work or home, you are probably writing emails. Even though Microsoft has rebranded its services, they are still behind Apple and Alphabet. The following graph shows the percentages of market share in this sector.

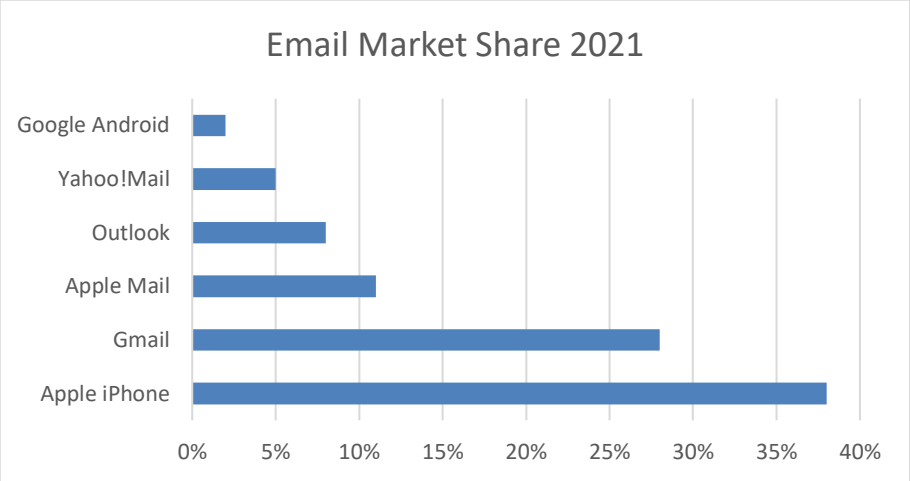

Figure 6. Email client market share 2021.

Source: Kingsta, 2022

Although Microsoft is left behind in the race for email services, they acquired a platform that is all about networking back in 2016. Microsoft purchased LinkedIn for $26.2 billion, which was its most expensive acquisition at the time. LinkedIn is a platform that focuses on creating an accurate and accessible network for professionals. The two value propositions of the company are to "stay connected and informed", and "advance your career" (LinkedIn, 2015). In 2021, LinkedIn has more than 700 million members and reached an unprecedented amount in revenue, surpassing $10 billion (Microsoft, 2021).

E-commerce Business Model

Handling online transactions are in the main focus of the e-commerce business model. Probably this model is not the main priority for either of the two firms, but there are still some products worth mentioning. Google Pay is one of the most recent success stories of Alphabet, enabling people to pay faster, easier, and with increased security. People can add their credit or debit cards to their Google Wallet and pay even if their card is not with them. On the other hand, Microsoft launched Dynamics 365 Commerce which aims to deliver a personalized shopping experience for users. It was announced in 2019 by Microsoft but did not reach its expected potential so far.

Even though the 4C business model typology is a great way to analyse the offerings of the two tech giants and prove the existence of the hybrid business model, they developed other important products and services outside of the typology. The desktop PC operation system of Microsoft has been the market leader for decades, a crucial source of revenue for the firm. The following pie chart displays the dominance of Microsoft in the world of PCs.

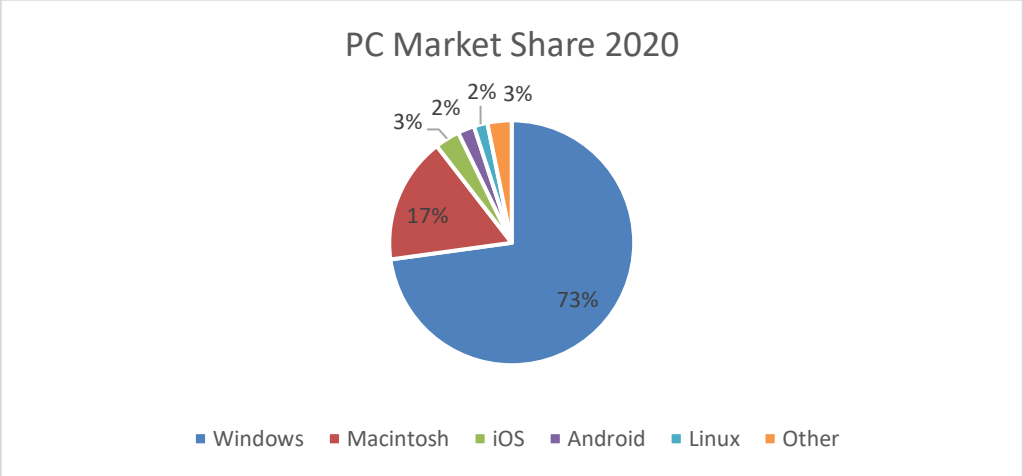

Figure 7. Market share of computer operating systems as of 2020

Source: Statista, 2020

Alphabet is also present in the race for operating systems; however, its main focus is on mobile operating systems where Android is a true competitor of Apple.

In conclusion, both companies managed to build a diversified portfolio of products, which serves as a competitive advantage over their competitors. This diversification minimizes risk and protects the company even from the most unexpected events, like the Coronavirus pandemic. Thanks to the development of a hybrid business model, they can enjoy the cost benefits of the previously mentioned economies of scale and build loyalty across the different business model levels more effectively (Wirtz, 2001a).

6.3.2. Capturing value

6.3.2.1. Microsoft

The following part of the study explains the nature of these products and services to better understand how Microsoft creates and captures value. The sources of revenue of a company are stated in the notes of the published financial statements. The following sentences are from Microsoft's Annual report for 2021.

"Product revenue includes sales from operating systems, cross-device productivity applications, server applications, business solution applications, desktop and server management tools, software development tools, video games, and hardware such as PCs, tablets, gaming, and entertainment consoles, other intelligent devices, and related accessories." "Service and other revenue includes sales from cloud-based solutions that provide customers with software, services, platforms, and content such as Office 365, Azure, Dynamics 365, and

Xbox; solution support; and consulting services. Service and other revenue also includes sales from online advertising and LinkedIn."

Licenses for Microsoft software are key in businesses and people's everyday life as well. The question is, how does Microsoft make money from it? Clients can either purchase the software at once or can subscribe to its services. The main differences between the immediate purchase and subscription are the price paid by the customers and the duration over which the subscriber uses the software. The recognition of revenue differs as well between licences. Distinct on-premises licenses require the revenues to be recognized at the time of the purchase, while licences in need of regular software upgrades must defer revenue recognition over their estimated life. In conclusion, one of the main revenue sources of the Microsoft business model is the development of software solutions and their licensing to the customers. The next part of this study explains how Alphabet generates revenues.

6.3.2.2. Alphabet

Alphabet annual report of 2021:

"We generate revenues primarily by delivering advertising on:
• Google Search and other 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.
• YouTube properties.
• Google Network properties, including revenues from Google Network properties participating in AdMob, AdSense, and Google Ad Manager.

Google Cloud Revenues

"Google Cloud consist of revenues from: Google Cloud Platform, which includes fees for infrastructure, platform, and other services; Google Workspace, which includes fees for cloud-based collaboration tools for enterprises, such as Gmail, Docs, Drive, Calendar, and Meet; and other enterprise services."

6.3.3. Differences in value creation

The analysis of the annual reports of the firms pointed out that there are some striking differences in how they capture value. Although they compete with many products, their main focus in producing revenue is on two fundamentally different product lines. Alphabet's main revenue source is coming from advertising, mainly from Google search and other Google-operated properties. There are two different ways of earning money from these platforms, brand and performance advertising. In the case of performance advertising, people click, purchase,

and view ads thus generating revenues for Google. Brand advertising is relevant mainly because of YouTube, where money is generated from displaying or viewing the ad. In contrast, Microsoft concentrates on licensing the software solutions of the company, for example, the well-known Microsoft Windows.

Additionally, one must consider the Cloud based services, as it generates a substantial amount of money for both companies. Both annual reports describe the way revenues are recognized from cloud-based services, and the method is exactly the same. The services are supplied either on a subscription or a consumption basis and revenue is recognized accordingly. Even though capturing value from cloud-based services is the same, there is still a product line that is increasingly important for both companies and is cloud-based for Alphabet and desktop-based for Microsoft.

Google Docs is a cloud-based service that does not generate revenues directly. It is rather encouraging people to use more web-based Google products that might contain an ad and lead to a click or a view. On the other hand, customers can purchase or subscribe to Microsoft Office applications, which is a crucial revenue stream for the company. In this example, not just their business model differs in capturing value, but their strategy behind it as well. Alphabet's main goal with its Google Docs solution is to gain more exposure to its other web-based applications, leading to indirect revenues and perhaps making life more difficult for competitors. Microsoft's strategy is to directly recognize revenue from the office applications as people are downloading them and potentially using them in combination with their market-leading operating system.

7. FINANCIAL RATIO ANALYSIS

7.1. Liquidity Ratios

After understanding how the two IT companies create and capture value, the paper dives into their financial performance in recent years. Based on the cash flow statement, the income statement, and the balance sheet, financial analysts can calculate a number of financial indicators. These indicators provide information on the financial performance of the company, and investors often used these ratios to assess the attractiveness of a business. The paper starts the analysis with the liquidity ratios of the companies. Liquidity indicators address the company's ability to pay back debt in time. As stocks cannot always be converted into cash, it is necessary to use several liquidity indicators. These should be monitored frequently as they expire quickly.

1. Current ratio formula: Total current assets/total current liabilities

The current ratio measures the ability of the company to pay back its current liabilities, including debt, with its current assets such as cash, inventory, and other marketable securities. The industry average of the current ratio was 1.49 in 2021. Table 7.1.1. below illustrates that both tech giants are well above the average, and can easily finance their current liabilities, which is a symptom of their enormous cash holdings.

Table 7.1.1.

Liquidity ratios	Alphabet	Microsoft
Ratio	*2021*	*2021*
Current ratio 1:	2.93	2.25
Cash Debt Coverage Ratio 1:	1.51	0.95
Cash ratio 1:	2.91	2.55

2. Current cash debt coverage: Net cash provided by operating activities/average current liabilities

The ratio of net cash provided by operating activities to average short-term liabilities provides a more reliable assessment of short-term liquidity and solvency. As this is a periodic indicator, it is important to include the average of short-term liabilities in the denominator, which can be obtained by a simple arithmetic average of the previous year's and the current year's balance sheet data.

Normally, a ratio above 1 means that the company can pay off its debt using the money inflow from its operating activities. In our case, Microsoft has a lower ratio than that, which is quite surprising as it shows a completely different picture than the current ratio of the company. In the case of the indirect cash flow method (which the companies are mostly using) accounts like accounts receivable, inventory, depreciation, unearned revenue, and other sources must be adjusted and deducted from or added to the net income. It can be considered a more effective indicator than the current ratio, as it shows whether the company can finance its current liabilities solely by relying on the cash flows generated from operational activities.

3. Cash Ratio: Cash and cash equivalents/total current liabilities

The cash ratio compares the company's immediately available cash with its current liabilities. The higher the ratio, the greater the proportion of the company's liabilities that can be covered by cash or bank account cash during the year. Having a lot of cash is very common in the technology industry, and these companies are not exceptions. This means that even in the worst-case scenario, current assets would be easily convertible into cash, for example, the marketable securities. Both companies have marketable securities worth more than $100 000 million, which is the reason why this ratio is so above the industry benchmark.

7.1.2. Why companies in the technology industry are holding so much cash?

One of the possible explanations is that they are preparing for a wave of acquisitions. This fact is not so surprising, as it is known that these two companies are the kings of M&A activity. An analyst told CNBC: “I think acquisitions are something all of these companies are thinking about as we get further along in the cycle, and they look for ways to keep their top-line growth accelerating”. Alphabet first announced the acquisition of Fitbit back in 2019, and data protection authorities were not happy about the deal. The acquisition meant that Google can further expand its presence in the digital marketing industry, exploiting the personal information of Fitbit users (CNBC,2021). Such acquisitions raise questions about what is considered anti-competitive, and whether Microsoft and Alphabet use M&A activity to eliminate competitors. The paper further elaborates on these issues in the monopolistic behaviour chapter.

Buybacks and dividends are also a way of spending money, but many investors think that doing it is a risk to the long-term profitability of the company. “Tech companies especially like to sit on cash, Evercore’s Lee Horowitz said, to keep “dry powder as a way to weather cyclical downturns” and to take advantage of market pullbacks to pick up assets.” (CNBC, 2019)

7.2. Solvency Ratios

Table 7.2.1. – Solvency Ratios

Solvency ratios	Alphabet	Microsoft
Ratio	*2021*	*2021*
Debt to assets ratio	0.30	0.57
Cash Debt Coverage	0.90	0.41
Times Interest Earned	263.24x	36.41x

Source: Own elaboration

Solvency refers to a firm's ability to meet its long-term financial obligations. A key objective of any business is to have sufficient assets to cover its liabilities and continue operations. This is called solvency, which reflects the financial health of companies. After calculating these indicators, the paper concludes whether the Coronavirus pandemic has negatively impacted the two giants of the IT industry. Many companies had experienced decreasing incoming cash flows which consequently threatened the principle of going concern of these businesses. One of the solutions was to rely on more debt financing, which led to worsening solvency ratios.

The paper calculates the following three ratios:

Debt to assets ratio: Total liabilities/Total assets
Cash debt coverage: Net cash provided by operating activities/average total liabilities
Times interest earned: (Net Income + Interest Expense + Tax Expense)/Interest expense

The debt-to-asset ratio is the ratio of financial capital used to assess the leverage of a company, specifically how much debt the company is taking on to finance its assets. Sometimes simply called the debt ratio, it is calculated by dividing a company's total debt by its total assets. Average ratios vary by business type, and the ratio may or may not be good depending on the context in which it is analysed. From a risk perspective, a lower rate is better. But what constitutes a "good" debt ratio depends on your industry. In the technology industry, the benchmark is 0.63.

Alphabet’s ratio is well below the industry average and easily beats Microsoft. Microsoft has $191 791 million of total debt, which is almost twice more than what Alphabet is holding. One of the main reasons behind this difference is long-term debt and the so-called unearned revenue in Microsoft’s balance sheet. The high amount of unearned revenue is caused by the structure of the business model of Microsoft, as they are providing volume licensing programs to customers. The following explanation is written in the notes of the annual report: “Unearned

revenue from volume licensing programs represents customer billings for multi-year licensing arrangements paid either at inception of the agreement or annually at the beginning of each coverage period and accounted for as subscriptions with revenue recognized rateably over the coverage period." The question of the high amount of long-term debt for Microsoft is more intriguing.

7.2.2. Is Microsoft Using Too Much Debt?

When investors are assessing the risk of their investments, it is an obvious choice to look at the balance sheet of the company in question. This process comes naturally as the most frequent cause of companies going under is the inability to pay their debt back. A useful way to assess this risk is to consider the amount of debt and cash holdings together. Even though we can see huge amounts of long and short-term debt in the case of Microsoft, we can conclude that compared with the enormous amounts of cash, the company is still in a good shape. It is highly unlikely that a company worth $2.14 trillion will be unable to pay off its debt, but it is important to keep an eye on the balance sheet. For the understanding and analysis of debt, the balance sheet is the right choice but there are other indicators that could help investors in deciding whether a company can maintain a healthy balance sheet. EBIT is one of them, which indicates the earnings of the company before interest and taxes. Microsoft's EBIT was $69.916 billion in 2021, an increase of 32% compared to last year. To be even more accurate investors can calculate the free cash flow of the company, which is its earnings minus the operating expenses and capital expenditures. Microsoft's free cash flow was $56.118 billion in 2021, a number that is reassuring for most of the stakeholders (NASDAQ, 2021).

7.2.3. Cash debt coverage

In the case of the cash debt coverage ratio, the cash generated by the operating activities must be divided by the total liabilities. This indicator is more about the long-term profitability of the company, long-term debt will have an important role in the evaluation. The ratio answers the following question: Can the company pay back its current and non-current liabilities solely relying on its operating cash flows? In general, the ratio is considered strong if it is above 0.5, although the ratios of competitors in the industry are even more informative. The average is 0.59 in the technology industry, which again displays the competitiveness of Alphabet, and the strategy of Microsoft holding higher amounts of debt.

8. EFFECT OF THE CORONAVIRUS PANDEMIC ON FINANCIAL HEALTH

The coronavirus outbreak seriously damaged businesses, communities, and customers all over the world, and the technology industry was not an exception. In this chapter, the paper will evaluate whether the pandemic had negatively affected the financial health of Microsoft and Alphabet based on its annual reports using a horizontal analysis.

Table 8.1. Horizontal analysis of consolidated income statements

Microsoft	2019	2020	**Change%**	2020	2021	**Change %**
In millions $						
Revenue	125 843	143 015	**14%**	143 015	168 088	**18%**
Cost of revenue	42 910	46 078	**7%**	46 078	52 232	**13%**
Operating income	42 959	52 959	**23%**	52 959	69 916	**32%**
Net income	39 240	44 281	**13%**	44 281	61 271	**38%**
Alphabet	2019	2020	**Change%**	2020	2021	**Change %**
In millions $						
Revenue	161 857	182 527	13%	182 527	257 637	41%
Cost of revenue	71 896	84 732	18%	84 732	110 939	31%
Operating income	34 231	41 224	20%	41 224	78 714	91%
Net income	34 343	40 269	17%	40 269	76 033	89%

Source: Own elaboration

8.1.1. Alphabet

From a strictly financial point of view, the two tech giants were positively affected by Covid-19. Alphabet reported a huge revenue increase in 2021 compared to the year before due to the high demand for online advertising, YouTube, and growing cloud services. Operating and net income grew at an incredible pace in 2021, an increase of 91% and 89% respectively. Although travel-related advertising had some negative impact on revenue growth, other types of advertising revenues soared as people were spending more time online (New York Times, 2021). The average time users spent online increased to 65 minutes in 2020 compared to 54 in 2019 (Statista Research Department, 2022). These numbers demonstrated that Google is an

almost unstoppable money-making machine, even in times of a pandemic. However, regulatory pressures and pending anti-trust lawsuits could threaten their dominance.

8.1.2. Microsoft

Just like its competitor, Microsoft also reported extremely strong numbers since the start of the Coronavirus outbreak. Revenue increased in 2020 by 14% compared to the year before, and the growth continued in 2021 with an increase of 17%. Net income also rose at an incredible pace, from $44 281 million in 2020 to $61 272 million in 2021. Even though the pandemic slowed down, the digital revolution did not stop. “Over a year into the pandemic, digital adoption curves aren’t slowing down,” Satya Nadella, Microsoft’s chief executive, said in a statement. “They’re accelerating.” Microsoft’s cloud computing services gained momentum as more and more companies are running their tools on Azure. Personal computing products were also selling much better during the pandemic as people invested in their home-office environment. Furthermore, revenue from gaming services and consoles rose by almost 50%. People had more free time at home to spend online gaming with friends, which positively affected the Xbox product line of Microsoft.

All in all, both tech giants were among the winners of the pandemic and their financial statements display that there is no sign of a slow-down in the near future. Their product portfolio is diversified enough to offset any losses from product lines that were hit by the Coronavirus and are able to focus their attention on their most profitable solutions.

9. COMPARISON OF CAPITAL STRUCTURE

Finding the optimal capital structure of companies has always been controversial, there is no magic formula so far. For the literature review of capital structure please refer to pages 10-11. In this chapter, the paper will analyse and compare the capital structure of the two tech giants.

9.1. Microsoft's approach to debt financing

Microsoft presents an intriguing case because the company relied on only equity financing until 2009 when its issued bonds worth $3,75 billion. The company communicated that they did not issue debt because of solvency issues, but rather for corporate purposes, including buying back stocks in order to generate artificial demand. The company saw an opportunity in being a triple-A-rated organization and the fact that there were signs of a recovering economy with an increased appetite for credit. There were rumours that Microsoft's intention was to acquire SAP, a business management software, but it did not happen at the end of the day (CNN Money, 2009). Even though there is no one solution for determining the optimal capital structure, academists agree that it should be a combination of debt and equity financing. According to the trade-off theory, highly profitable companies like Microsoft benefit the most from the tax shield of debt financing, an opportunity that they probably became aware of. Since then, the company relies heavily on debt financing having almost $60 billion of long-term debt in 2020.

Furthermore, examining the history of debt issuance/retirement could serve as a useful tool to better understand Microsoft's approach to debt. Debt issuance/retirement is the total amount of short and long-term debt issued and repaid. The following graph shows the history of this indicator, starting from 2009 until 2021. Annual values are in billion U.S. dollars.

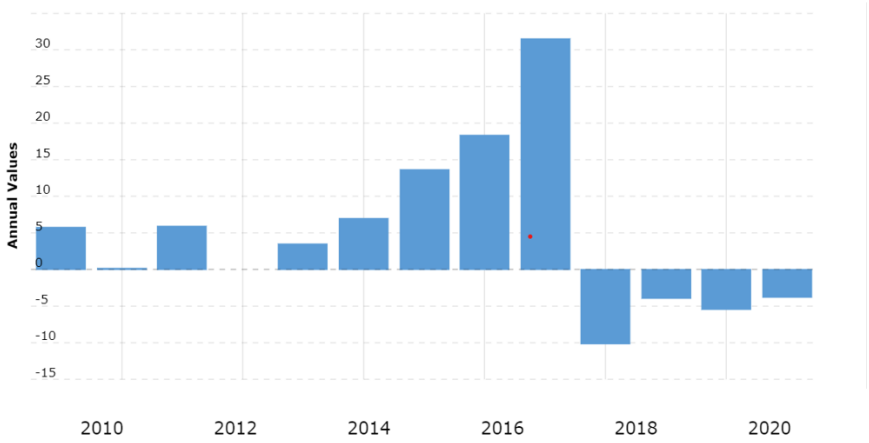

Figure 8. Debt issuance/retirement of Microsoft 2009-2021.
Source: Macrotrends, 2022

The graph illustrates an increasing trend from 2013 when the company was issuing more debt than repaying. In 2017 the company issued $44 billion of debt starting at the end of January, when Microsoft sold $17 billion of bonds. This time there was another reason beyond only using debt for general corporate business. The second-biggest acquisition of Microsoft was achieved in 2016, the company bought LinkedIn for $26 billion. Microsoft needed money to repay the short-term debt used in the acquisition process (MarketWatch, 2021). Following this logic, investors could expect another flow of bond issuance in 2022, since Microsoft acquired Activision Blizzard, the biggest deal in its history so far. Although this deal means that the company will rule the video gaming industry, there is a chance that Microsoft will need to raise money to recover.

9.2. Alphabet's approach to debt financing

The timeline of debt issuance of Alphabet followed a similar path as Microsoft. They had operated with only internally generated and equity funds until 2011. The pecking theory confirms this logic, both tech companies first turned to internally generated cash to finance their operations. In May 2011, the 10-year bond yields continued to drop, an opportunity that was impossible not to exploit. Experts were talking about Google essentially getting free money at these rates that they could easily use for acquisitions. They finally sold bonds for almost $3 billion, and it marked the beginning of an era of debt issuance (The Wall Street Journal, 2011). The following table shows the evolution of debt issuance/retirement of Alphabet from 2010 to 2021.

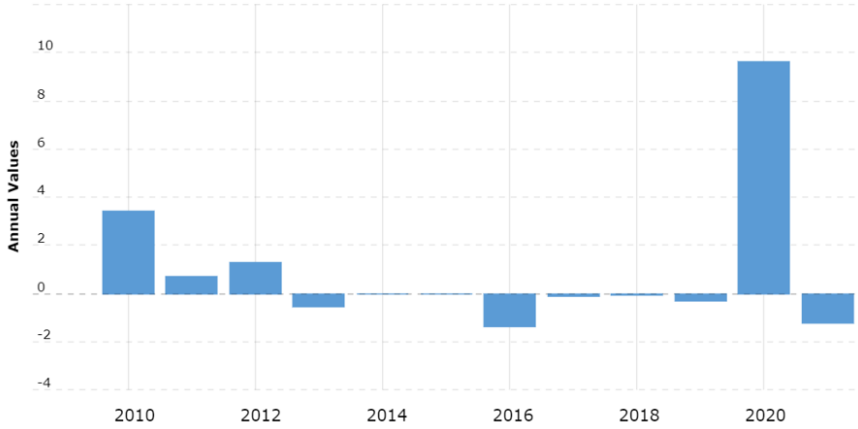

Figure 9. Debt issuance/retirement of Alphabet 2010-2021.

Source: Macrotrends, 2022

Unlike in the case of Microsoft, after the initial debt issuance of $3 billion, Google repaid more debt throughout the years and issued relatively low amounts. However, there is one year, 2020, which stands out from the rest with a record high debt issuance. Alphabet issued $10 billion worth of bonds with all-time low rates, which was considered the cheapest source of financing ever for the tech giant. Investors were craving high-quality bonds, and the Federal

Reserve just provided the right circumstances with its bond-buying appetite and low interest rates. The deal generated three times higher demand than the original $10 billion with coupons reaching 0.45%. According to the press release, 45% of the amount was used for corporate purposes, and 55% was invested in sustainability bonds (Reuters, 2020). According to Ruth Porat, Alphabet CFO, sustainability bonds differ from any other types of bonds in that the money is invested in projects with environmental and social initiatives. Here are some examples of the projects in discussion: Energy Efficiency, Clean Energy, Green Buildings, Clean Transportation, Circular Economy and Design, Affordable Housing, Commitment to racial equity, and Covid-19 response (Google, 2020).

After looking at the evolution of debt issuance of Microsoft and Alphabet, it is clear how they approach debt, and how important the role of debt in a company's capital structure is. Despite of the fact that both firms turned to debt financing at about the same time, the amount issued and repaid during the years differ from each other. Furthermore, there is a crucial difference between how the proceeds from the bonds were spent. It is undeniable that Microsoft is spending more on M&A activity, and although the press releases often claim that the main motivation for bond issuance is to spend it on corporate purposes, it is obvious that on many occasions they needed these funds to finance their costly acquisitions. On the other hand, 55% of the largest debt issuance by Alphabet is invested in environmental and social issues, a decision that hopefully will be more common in the future.

10. ANTI-COMPETITIVE BEHAVIOUR

In this chapter, the paper digs deeper into two anti-trust lawsuits that had or will have a huge impact on the financial performance of the two companies in question. After introducing the two cases and their consequences, the paper introduces the historical performance of their stock prices and explains the financial effect of such legal actions on them.

10.1. United States v. Microsoft

In the case of Microsoft, the paper introduces an already settled anti-competitive lawsuit of historic importance. In 1998, the tech company was sued by 19 U.S. states and by the Department of Justice for attempting to monopolize its operating system, internet browser and for bundling these two products together (Economides, 2001). The case greatly influenced the strategies of tech companies and provided a learning opportunity for law authorities on how to better approach such a lawsuit against powerful tech companies.

The existence of the Windows operating system and the internet explorer has merged with the Internet and the world of PCs from the very beginning. According to the U.S. attorneys, consumers did not have a choice when it came to selecting software products for their computers and the actions of Microsoft ultimately hurt the American consumers. General Janet Renot, U.S. attorney, made the following statements publicly: “Microsoft is unlawfully taking advantage of its Windows monopoly to protect and extend that monopoly.”. “We took action today [in the courts], “to ensure that consumers will have the ability to choose among competing software products”. The lawsuit is essentially about Microsoft using its dominance in the market of operating systems to influence and persuade consumers to buy other Microsoft software solutions (Mckenzie and Shughart, 1998).

10.1.2. The Agreement of 1995

Two issues must be separated in this lawsuit. The first is whether Microsoft violated its agreement with the U.S. Department of Justice which was accepted in 1995 by both parties. The agreement stated that Microsoft cannot require consumers to install separate software products beyond the Windows operating system, but at the same time allows Microsoft to sell integrated components within the system. It is not difficult to guess the position of the two sides. Microsoft claims that the Internet Explorer is an integrated component of Windows, while according to the Department of Justice they are clearly forcing users to install the web browser, thus depriving them of the right to choose from alternatives. The issue is quite tricky, as regulators had to examine the language of the agreement and decide whether Internet Explorer could be considered an integrated component. According to the interpretation by the Justice Department of the original agreement, Microsoft should be fined $1 million per day for bundling the two products together (Gruley and Wilke 1998). The other issue is whether Microsoft has made competing impossible for other market players within the IT industry, thus violating anti-trust laws. One player is specifically mentioned in the lawsuit, Netscape, a

company that was developing an operating system based on the Java programming language, but which could not stand a chance against Microsoft.

On the other hand, Microsoft argued that the Internet browser is indeed an integrated part of the Windows operating system and that it could not function properly without it. Microsoft claims that the Explorer uses and contains code in itself that is essential for the operation of the software (Mckenzie and Shughart, 1998). Finally, Microsoft and the Justice Department reached a settlement that imposed a number of restrictions in order to stop the monopolistic behaviour of Microsoft. The following paragraph is from the official text of the lawsuit:

"The settlement reached today accomplishes this by:

- creating the opportunity for independent software vendors to develop products that will be competitive with Microsoft's middleware products on a function-by-function basis.
- giving computer manufacturers the flexibility to contract with competing software developers and place their middleware products on Microsoft's operating system;
- preventing retaliation against computer manufacturers, software developers, and other industry participants who choose to develop or use competing middleware products; and
- ensuring full compliance with the proposed Final Judgment and providing for swift resolution of technical disputes."

Additionally, the court also ordered Microsoft to break up into two entities, but the decision was overturned. Although the outcome of the case could have been worse for Microsoft, Bill Gates publicly blamed the lawsuit for not being able to compete with Google and Apple in the race for the developing the best mobile operating system. He claimed that the case was such a distraction, that the company could not focus on its new projects (Insider, 2020). The lawsuit is especially relevant today, as Alphabet is facing a shockingly similar case.

10.2. United States v. Alphabet – Google Play Monopoly

Most people do not think about where they bought the last application they are using on their mobile phones. If they were to be asked, the answer potentially would be Apple store or Google Play. These two applications became equivalent with app purchases, but this should not be the case according to the plaintiffs in a recent lawsuit against Alphabet. Why there are no other options? Why do people use Android phones and never even think about having another store for mobile applications other than Google Play? These are the questions that Google's parent company must face, and which could entail some serious financial consequences.

Almost all U.S. states sued Alphabet for anti-competitive behaviour regarding the Google store in 2021, which makes life extremely difficult for app developers and small businesses at the same time. The case claims that as a result of Alphabet bribing competitors and acquiring a small business, they are able to increase prices for consumers without consequences. Google Play app developers have to pay a 30% commission fee on sales for using the platform. It is not

a coincidence that app purchases generate billions of U.S. dollars in revenue for the tech company. Although not specifically mentioned in the annual report, the group of revenue sources, in which Google Play is included, generated $28 billion in 2021 (Reuters, 2020).

In order to avoid being biased toward the lawsuit, the paper discusses how Alphabet responded to the complaint made by the district attorneys of U.S. states. The following arguments are from Alphabet's Vice President of Government Affairs & Public Policy. Wilson White says that everyone has the opportunity to develop and build devices within the Android operating system and emphasizes the fact that Google does not limit the customers' ability to download directly from a developer's website. According to the vice president, the app developers have earned around $80 billion thanks to their platform as of 2020, and that it helped to create millions of jobs. He also adds that the complainants completely forgot about the App store, which is the most popular choice on the market and Google must compete with them for consumers.

The most important question of the lawsuit is the financial consequence on Alphabet if the allegations are true. The following paragraph is directly from the Utah v Google Complaint: "490. Plaintiff States are entitled to, and should be awarded, a remedy of disgorgement against Google for any unjust profits that Google received as a result of the unlawful conduct described herein which is not income derived from natural persons (or others under state laws where applicable) that is subject to recovery under parens patriae authority. For example, such income could include (but is not necessarily limited to) income from sales of advertising inside the Google Play Store or from data associated with in-app purchases acquired by Google through Google Play Billing. Further, if Plaintiff States are denied recovery of parens patriae damages, Plaintiff States are entitled to, and should be awarded, disgorgement against Google for income Google derived from natural persons (or others under state laws where applicable)."

To put it simply, Alphabet must pay back the revenues earned as a result of its monopolistic behaviour. To be able to estimate this amount, the following table shows the revenue sources of Alphabet including the most relevant one (Google other) which includes these potentially unjust profits. The paper applies a vertical analysis as well so that the reader could see the percentage of revenue from Google Play compared to the total amount.

Table 10.2.1. Alphabet's revenue structure in the last three years

In millions $	2019	%	2020	%	2021	%
Google search and other	$98 115	60,6%	$104 062	57,0%	$148 951	57,8%
YouTube ads	$15 149	9,4%	$19 772	10,8%	$28 845	11,2%
Google network	$21 547	13,3%	$23 090	12,7%	$31 701	12,3%
Google advertising	$134 811	83,3%	$146 924	80,5%	$209 497	81,3%
Google other	$17 014	10,5%	$21 711	11,9%	$28 032	10,9%
Google Services total	**$151 825**	**93,8%**	**$168 635**	**92,4%**	**$237 529**	**92,2%**
Google Cloud	$8 918	5,5%	$13 059	7,2%	$19 206	7,5%
Other Bets	$659	0,4%	$657	0,4%	$753	0,3%
Hedging gains	$455	0,3%	$176	0,1%	$149	0,1%
Total revenue	**$161 857**	**100%**	**$182 527**	**100%**	**$257 637**	**100%**

Source: Alphabet annual report 2021

The table illustrates that the money generated by Google Play was always above 10% percent of the total revenue in the last three years, reaching the previously mentioned $28 billion in 2021. Moreover, it must be mentioned that from 2020 to 2021, the income from Google other increased by almost 30%. The paper concludes that if the plaintiffs win the lawsuit proving that Alphabet is illegally influencing the market conditions, the amount of damage will be substantial. Not only do they have to pay back billions of U.S. dollars, but they have to face the reputational effects of these actions as well, which will be discussed at the end of this chapter.

10.3. Stock price evolution

Before discussing the effects of legal action on stock prices, the case study delves into the evolution of the two firms' stock prices and compares them to two market indexes. The objective of this part is to present the performance of their stock during the last five years relative to the market.

The paper compares the five-year evolution of the two companies' stock prices and two important indexes, the S&P 500 and the NASDAQ-100. The S&P 500 is a market

capitalization-based index that includes the 500 leading publicly traded companies in the United States. The NASDAQ-100 is a stock market index made up of the 100 largest technology-driven companies which are actively traded in the market. The following graph was developed by calculating the natural logarithm of the monthly differences in closing stock prices, which was then added to 100%. This way, the figure illustrates effectively how each stock or index was developing through the last few years. The calculation was necessary as companies have different amounts of outstanding shares thus stock prices could hugely differ.

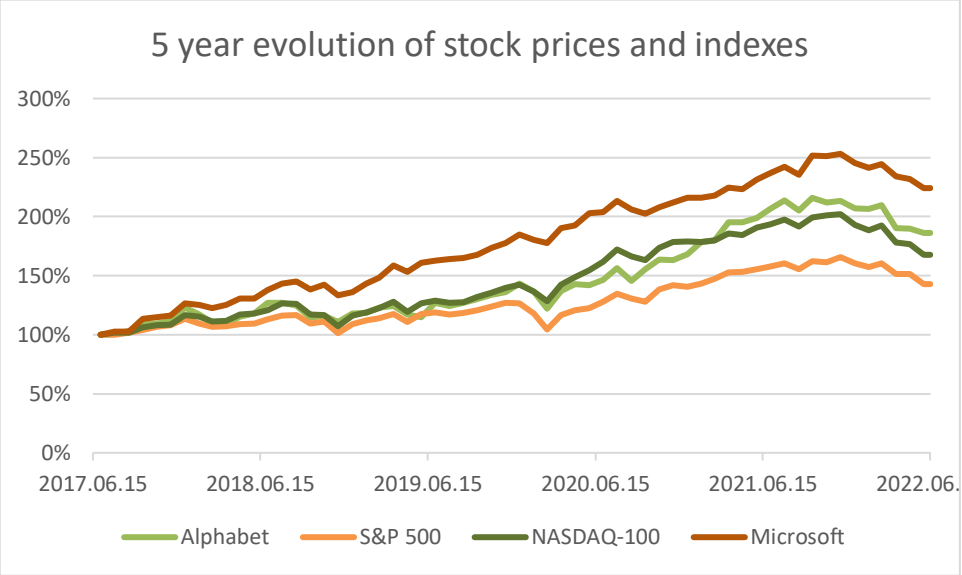

Figure 10. 5-year evolution of examined stock prices and indexes.

Source: Own elaboration

As the red line illustrates, Microsoft stock outperformed not just its main rival, but all the other competing companies on the market. By 2020, its stock price almost doubled in value, reaching a market capitalization of $1.68 trillion. In 2021, the stock performance reached its peak, growing to 250% of the original share price in 2017. The continuously improving financial performance of Microsoft, as discussed in previous chapters, has generated huge returns for long-term investors that believed in Microsoft.

In the case of Alphabet, the line chart illustrates that its share price moved together with the NASDAQ-100, outperforming the S&P index. Similar to Microsoft, Alphabet's share price reached its peak around the last month of 2021, going above 200%, as a result of the increased revenue and net income generated in those quarters. In 2021, its share was up by 68%, which is even higher than Microsoft's yearly growth. The market capitalization of Alphabet was approaching the dream threshold of $2 trillion, sitting at $1.95 trillion at the end of 2021. In contrast to prior incredible performance, 2022 is a dark year for tech companies and the stock market as a whole so far. By 2022, Microsoft lost $189 billion, Alphabet around $123 billion in value. It was mainly caused by the increased interest rates and by investors taking a new direction towards even safer investments (CNBC, 2022).

10.4. Stock price reaction to lawsuits

In both cases, the settlement in itself had and will have some serious effect on the IT companies' financial performance. As discussed above, if Alphabet loses the lawsuit, it might have to repay the illegally obtained profits and adapt to the many requirements that the court would define. In the case of Microsoft, the biggest loss from the case was probably the opportunity cost of the lawsuit. They could have developed their mobile operating system and possibly generate billions of U.S. dollars. However, the implicit cost of declining share price could also entail some serious repercussions.

According to Rob Bauer and Robin Braun (2010), the filing of a lawsuit results in a constantly declining share price which does not come as a surprise. Nonetheless, they observed that there is a huge dip in the share price before the filing of the lawsuits. The two possible reasons behind this are that people either already heard the rumours, or it is a consequence of the triggering events. The following figure shows the decline in relation to the days relative to the filing. The graph also displays that even after 40 days of the filing, the share price cannot recover, not even getting close to its original value.

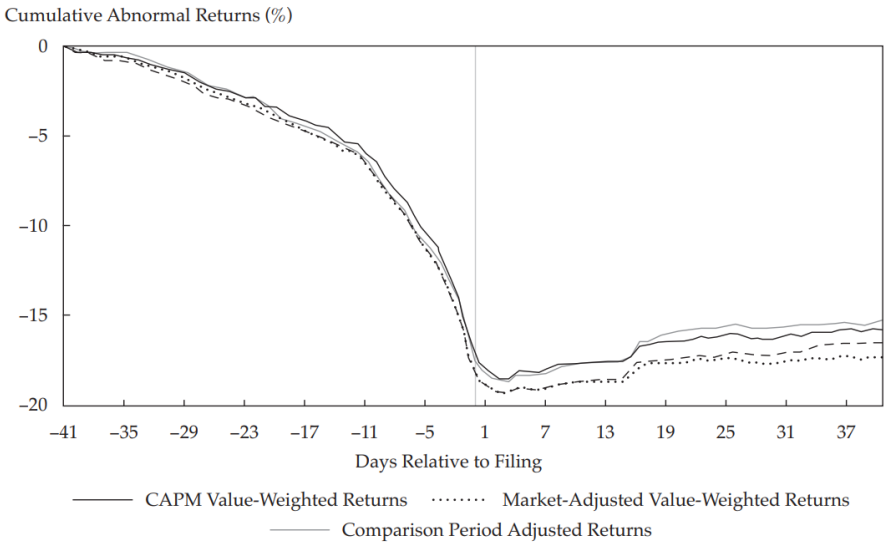

Figure 11. Short-term performance and the Announcement effect.

Source: Bauer and Braun 2010

The effect of a declining share price does not have any immediate effect on the company itself, but these shares often serve as another type of currency and could lead to increased costs for the company. This is especially true for these two firms, as they thrive on acquiring other businesses. Before an acquisition, companies must raise money, which they could do by selling more of their shares. If the value of the shares declines as a result of the legal actions, they must sell more now or even turn to other more expensive financing options. Moreover, the

remuneration package of management is often tied with share performance, thus depriving managers of their bonuses at yearend (USAToday, 2022). The rumours about Alphabet's anti-competitive lawsuit started back in 2020, and the historical share prices show the expected declining pattern, thus confirming the above detailed observation. According to S&P Global Market Intelligence, Alphabet's share price dropped by 10% possibly due to the allegations made by the U.S. Department of Justice.

In conclusion, both Microsoft and Alphabet had their fair share of fighting with the U.S. government as a result of their potentially anti-competitive actions. Guilty or not guilty, these lawsuits will hopefully create a safe and fair environment for each and every market player, from consumers to developers. As for the financial consequences, the Microsoft case serves as an example that even though such cases consume an enormous amount of tangible and intangible resources and hurt the reputation and share price of the tech giant, it does not threaten its long-term survival.

11. CONCLUSION

This paper explores the reasons why the two tech giants are among the most successful companies not just in the IT industry, but in the whole world. The comparison of the business models sheds light on why Microsoft and Alphabet are so profitable despite having to face the same undesirable market conditions as everyone else throughout the last few years. Their hybrid digital business model allows them to have a diversified portfolio of products and services that reduces financial risk and results in multiple revenue streams which are discussed in the comparison of the business model chapter. The same chapter also outlines some of the differences in capturing value by making a comparison of two of their successful products, Google Docs and the Microsoft Office application. While Alphabet focuses on influencing customer behaviour, thus leading them to get more involved in other digital products, Microsoft generates money directly through realizing subscription revenue.

After comparing the business models, the case study introduces the state of their financial health and calculates a few extremely useful financial ratios. Although there were only a handful of businesses that improved their financial performance during the Coronavirus pandemic, the numbers prove that both companies were among the lucky ones. Most of their financial ratios are well above the industry averages, and the amount of cash they are holding is outstanding compared to any other company. Furthermore, Microsoft and Alphabet decided to offer bonds to the public starting in 2009 and 2010, thus raising even more money externally. Cash holdings in combination with debt financing make them even more dangerous as a result of their increased appetite for acquisitions. Both companies were involved in gigantic acquisitions in the last decade, thus strengthening their market position. One could wonder what competing companies could do to avoid getting eaten by one of the tech giants and whether this kind of M&A activity disrupts the market conditions or not. This question leads to the last chapter of the paper, which focuses on two anti-trust lawsuits that were filed due to their alleged anti-competitive actions.

The Microsoft vs. United states court case was a landmark event in the IT industry at the beginning of the 21st century. Microsoft lost the case, and the lesson learned for everyone, especially for powerful firms, was that it does not matter how huge and profitable your business is, you have to meet the same standards and compile with the same regulations as any other competitor. Even though the financial costs of the case were not substantial, Microsoft still had to suffer from a temporary loss of reputation and a lot of opportunity costs involving the chance of being a market leader in the mobile phone industry. One could think that the case served as a cautionary tale for Alphabet, but recently they get involved in a shockingly similar case. The end of the study discusses the antitrust lawsuit of Alphabet, focusing on its financial impact on its stock price. The author believes that the Google Play anti-trust case is of similar importance as the lawsuit against the Windows operating system and serves as the only chance for the public to stop the expansion and the customer exploitation of such dominant companies.

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