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Taming the Tech Giants: Assessing the Implications of Monopoly Power in the Platform Economy

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To my parents, for their support and encouragement throughout my academic career. Even if they were thousands of kilometres away, their guidance has been my constant companion.

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Otabek

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Table of Contents

Chapter 1
Introduction

In 2020, the COVID-19 pandemic wreaked havoc on the global economy, leading to significant declines in profits and revenues for many companies. However, Big Tech firms such as Apple, Amazon, Alphabet (Google's parent company), and Facebook (now Meta) not only weathered the storm but experienced an economic boom. These companies saw their combined stock price rise to nearly $5 trillion, twice as much as before the pandemic.

Their enormous control over their respective markets allows them to alter algorithms or rules, forcing competitors or suppliers out of business, as exemplified by Amazon's prioritisation of its products over competitors (Khan, 2017) and Apple's 30% transaction fee for direct competitors like Spotify and Epic Games..

Consequently, politicians in the US and Europe have been debating possible ways to regulate the world's biggest technology companies (Khan, 2017). In the 2020 Democratic primaries, several US presidential candidates, such as Elizabeth Warren, proposed breaking up the tech giants due to their monopolistic behaviour and unfair business practices (Warren, 2019). Interestingly, the idea of regulating Big Tech has garnered bipartisan support in the US Congress, with Democrats concerned about monopolistic and economic power and Republicans worried about censorship of conservative views (Kovach, 2020).

While trustbusters often categorize all Big Tech companies as "gatekeepers" of the digital economy (Ezrachi & Stucke, 2016), each company operates differently, raising various antitrust, social, and political issues. Additionally, most Big Tech companies enjoy high levels of trust among the US public (with Facebook as an exception) (The Verge, 2020), complicating the task of regulation.

The famous quote, "With great power comes great responsibility," raises the question of whether these powerful and influential companies can always act responsibly, or whether "The Great Regulation" is necessary. This paper will examine the market dominance acquired by Big Tech and explore the tools governments and institutions are considering to regulate these giants. We will also discuss whether these interventions could foster innovation and restore competition or merely provide a temporary setback for Big Tech without any substantial benefits for the economy and society at large.

1.1 Emergence of "Big Tech"

When the personal computers and software industries were emerging in the late 20th century, small at that time companies such as Microsoft and Apple disrupted the industry where corporations like IBM were dominant for several decades. Apple even made a commercial called "1984" for its new coming PC, Macintosh, looking at a future where the earth is controlled by "Big Brother" referring to IBM, and portrayed itself as young and rebellious. That same reputation for tech companies was refreshed during the dot-com boom of the late 1990s with the emergence of Amazon and others and later again during the 2000s with the rise of Google and Facebook.

At that point, it seemed like being a big corporation was a disadvantage and something old and the new digital economy would not allow it. The idea was that these companies are better equipped to stay small and move fast while disrupting the industry. All this suggested that in the digital economy there could not be such a thing as a lasting monopoly, because this competitive industry would not allow it to happen (Tim Wu, 2018). There were no barriers to entry, and innovative start-ups were entering and exiting the economy at a previously never seen pace.

As time passed and these companies grew in influence, the words of Harvey Dent from Hollywood movie "The Dark Knight" rang true: "You either die a hero, or live long enough to see yourself become the villain." Analogy here can be drawn to the realization that even companies initially hailed as disruptive forces in the industry may face criticism and concerns over their growing power and impact.

After the chaotic period of the dot-com boom passed, something surprising happened. Companies like Amazon, Facebook and Google didn't disappear and instead were gaining the dominance. Suddenly, there were no multiple social networks, there was Facebook and several small ones. The same happened with Google and Amazon.

These companies often referred to as "Big Tech" vary in different ways and do not directly compete with one another in their "core" businesses. For instance, Amazon's core business is e-commerce, Apple's hardware, Google's search engine and Facebook was primarily a social network company. However, these companies have much in common, to name few:

- Dominant (co-)founders: Jeff Bezos (Amazon), Mark Zuckerberg (Facebook), Steve Jobs (Apple), Sergey Brin and Larry Page (Google);
- They own and control digital platforms on which other businesses and users depend;
- Enormous market share in at least one product/service category;
- Global Presence: Big Tech companies have a significant global presence, with operations and customers spanning multiple countries and regions. This international footprint enables them to benefit from economies of scale, access diverse markets, and maintain a competitive edge;
- Diversification and Expansion: Big Tech companies tend to diversify their products and services offered, by entering new markets and expanding their presence across various industries. This strategy allows them to mitigate risks, leverage synergies, and create new revenue streams.

These common characteristics have played a significant role in the growth and success of Big Tech companies, shaping their market dominance and influence in the platform economy and beyond.

1.2 Brief introduction to the platform economy and its key characteristics

In this section, we will define the platform economy and discuss its key characteristics, which set it apart from traditional business models. In the later chapters, we will discuss related economic theories and notions more in depth.

1.2.1 Platform Economy: Definition

A platform is an entity which brings together several economic agents and actively manages network effects between them (Belleflamme & Peitz, 2021). This concept is not new and similar platform-like intermediaries have existed for a quite long time. Imagine a grocery market which operates during the weekends, where sellers and buyers meet. Similarly operates digital platforms, in a way bigger scale and transactions. With new technologies and data, digital intermediaries allow for both (or multiple) sides to decrease transaction costs. Another important feature of digital platforms is trust, which must be guaranteed by the entity acting as an intermediary. Because a platform which highly depends on network effects cannot successfully exist if parties do not respect the binding contracts.

Key Characteristics:

1. Network Effects: One of the primary characteristics of platform businesses is the presence of network effects, where the value of the platform increases with the number of users participating in the platform (Katz & Shapiro, 1985). This creates a self-reinforcing cycle, as more users attract more suppliers, and vice versa. Positive network effects contribute to the rapid growth and market dominance of platform companies.
2. Data-driven Feedback Loops: Platform businesses often utilize data-driven feedback loops to continuously improve their services and user experience (Hagiu & Rothman, 2016). By analyzing the data gathered from user interactions, those platform companies tend to optimize their algorithms, better customize their products, and as a consequence make more informed business

decisions. By doing this, platform businesses could achieve a competitive advantage over traditional firms.

3. Scalability: Digital platforms can scale rapidly and efficiently due to their low marginal costs and the absence of physical constraints (Eisenmann, Parker, & Van Alstyne, 2006). This allows digital platform businesses to expand their user base, enter new markets, and quickly adapt to changing market conditions. The scalability of platform businesses contributes to their growth and market power.
4. Multi-sided Markets: Platform businesses operate in multi-sided markets, where they serve multiple user groups and facilitate interactions between them (Rochet & Tirole, 2003). For example, Uber-like platforms connect riders with taxi drivers, while an e-commerce platform connects buyers and sellers. By serving multiple user groups and creating value for each, platform businesses can generate multiple revenue streams and foster synergies between different user segments.
5. Winner-takes-all Dynamics: Due to network effects and the economies of scale, platform businesses often exhibit winner-takes-all dynamics, where a single dominant platform captures the majority of the market share (Eisenmann et al., 2006). This can lead to market concentration and the emergence of powerful platform monopolies. A good example of this are the food delivery platforms, where their strategy is oriented at quickly gaining the market share, by damping their prices at first (Möhlmann & Zalmanson, 2017).

In conclusion, the platform economy is characterized by its digital nature, network effects, data-driven feedback loops, scalability, multi-sided markets, and winner-takes-all dynamics. These characteristics contribute to the rapid growth, market dominance, and competitive advantages of platform businesses, setting them apart from traditional firms.

1.3 Historical Context and Evolution of the Platform Economy

In this section, the historical context and evolution of the platform economy will be discussed, analyzing the factors that contributed to its rise and development.

1. Internet and Digital Technologies: The era of the platform economy started with the widespread use of the internet and the advancement of digital technologies in the late 20th century (Brousseau & Penard, 2007). The Internet provided the online connectivity needed for the digital platforms to emerge.
2. Early Platform Businesses: The first platform businesses, such as eBay emerged in the 1990s, which showed the potential impact of digital platforms to disrupt the traditional business sectors (Hagiu & Wright, 2015). These early platforms like eBay provided online marketplaces for goods and services, connecting buyers and sellers while reducing transaction costs and increasing efficiency.
3. The Smartphone Revolution: The widespread adoption of smartphones in the late 2000s and early 2010s played a significant role in the growth of the platform economy. As smartphones became capable, they provided ordinary users with on-hand access to the internet. Consequently, this enabled for the platforms such as Uber and Airbnb to grow at a significant rate (Cusumano, Gawer, & Yoffie, 2019).
4. Expansion of Platform Business Models: As the platform economy evolved, new platform business models started to emerge. For instance, social media platforms like Facebook and Twitter revolutionized how we communicate and share information, while streaming platforms like Netflix and Spotify transformed the way we watch movies and listen to music (Kenney & Zysman, 2016).
5. The Rise of Big Tech: Over the past years, Big Tech companies such as Amazon, Google, Apple, and Facebook have become major players in the platform economy, leveraging their platforms to acquire significant market power and influence (Srnicek, 2017). These companies have grown super fast,

expanding into various industries and sectors, and often engaging in acquisitions and vertical integration to consolidate their market positions (Langley & Leyshon, 2017).

The platform economy has evolved significantly since its inception, driven by advancements in digital technologies, the widespread adoption of smartphones, and the rise of Big Tech companies. From early pioneers like eBay and Craigslist to the global powerhouses of today, platform businesses have disrupted traditional industries, introduced new business models, and reshaped the global economy.

1.4 The role of Big Tech companies in the platform economy.

Here we will briefly discuss the role of Big Tech companies in the platform economy, examining their market dominance, business strategies, impact on various industries and sectors, as well as their influence on regulation and public policy.

1.4.1 Market Dominance

Big Tech companies, such as Amazon, Google, Apple, and Facebook (now Meta), have emerged as dominant players in the platform economy, leveraging their platforms to amass significant market power and influence (Srnicek, 2017). Their strong network effects, vast user bases, and access to vast amounts of data have allowed them to consolidate their positions in multiple markets and create entry barriers for potential competitors (Rochet & Tirole, 2003).

1.4.2 Business strategies

Big Tech companies have adopted a range of business strategies to expand their reach and strengthen their platforms. These strategies include:

- Vertical Integration: By integrating vertically, Big Tech firms can exert greater control over their ecosystems, increase their market share, and protect their

competitive advantage (Cusumano et al., 2019). For example, Amazon's acquisition of Whole Foods allowed the company to expand its grocery business and leverage its logistics infrastructure to offer faster delivery options.

- Acquisitions: Big Tech companies often acquire smaller players to strengthen their market positions and eliminate potential competitors. For instance, Facebook's acquisition of Instagram and WhatsApp helped the company consolidate its position in the social media market and expand its user base (Cusumano et al., 2019).
- Partnerships: Big Tech firms also form strategic partnerships with other companies to create synergies and expand their reach. For example, Google's partnership with Android device manufacturers has helped the company increase the adoption of its mobile operating system and strengthen its position in the mobile market.

1.4.3 Disruption of Traditional Industries

Big Tech companies have disrupted various traditional industries by introducing new business models and leveraging their platforms to provide innovative products and services. Some examples include:

a. Retail: Amazon has transformed the retail industry through its online marketplace, logistics network, and Prime subscription service, which offers fast shipping, streaming content, and other benefits (Kenney & Zysman, 2016).

b. Advertising: Google and Facebook have revolutionized the advertising industry by offering targeted advertising services, enabling businesses to reach specific demographics and measure the effectiveness of their campaigns (Deighton & Kornfeld, 2009).

c. Media and Entertainment: Streaming platforms like Netflix, Amazon Prime Video, and Apple TV+ have disrupted the traditional media landscape by offering on-demand content and original programming, challenging the dominance of cable television and movie studios (Waldfogel, 2017).

1.4.4 Platform Synergies

Big Tech companies often leverage synergies between their platforms to create additional value for users and strengthen their competitive positions. Some examples include:

a. Apple's Ecosystem: Apple's ecosystem of devices, software, and services (such as iPhone, macOS, iCloud, and Apple Music) allows the company to offer a seamless user experience across multiple products, fostering customer loyalty and driving sales of complementary devices and services (Eisenmann et al., 2006).

b. Google's Suite of Services: Google's suite of services, including search, email (Gmail), maps, and cloud storage (Google Drive), enhances the utility of its platforms for users and provides cross-platform integration, making it difficult for users to switch to competing services (Rysman, 2009).

1.4.5 Impact on Innovation and Competition

The dominance of Big Tech companies in the platform economy raises concerns about their impact on innovation and competition.

a. Stifling Innovation: Critics argue that their market power may stifle innovation by creating barriers to entry for new players and by engaging in anti-competitive practices, such as predatory pricing and preferential treatment of their products and services (Khan, 2017).

b. Fostering Innovation: On the other hand, proponents of Big Tech argue that their platforms foster innovation by providing resources, infrastructure, and opportunities for startups and entrepreneurs (Parker et al., 2016). For example, Amazon Web Services (AWS) has enabled numerous startups to build and scale their businesses on its cloud infrastructure, while Apple's App Store and Google Play have provided a marketplace for app developers to reach millions of users.

1.4.6 Regulation and Public Policy

The growing influence of Big Tech companies has also led to increased scrutiny from regulators and policymakers worldwide.

a. Antitrust and Competition: Regulators in various jurisdictions have initiated antitrust investigations and lawsuits against Big Tech companies, focusing on their market dominance and alleged anti-competitive practices (Stucke & Grunes, 2016). For example, the European Union has imposed several multibillion-dollar fines on Google for abusing its dominant position in online advertising and search.

b. Data Privacy and Security: Policymakers are increasingly concerned about the data privacy and security practices of Big Tech companies, leading to the implementation of stricter regulations, such as the European Union's General Data Protection Regulation (GDPR) (Kuner et al., 2019). These regulations aim to give users more control over their data and impose stricter requirements on businesses regarding data collection, processing, and storage.

c. Content Moderation and Misinformation: Big Tech companies, particularly social media platforms, have come under increasing pressure to address issues related to content moderation, misinformation, and harmful content (Gillespie, 2018). Policymakers and the public have called for greater transparency and accountability in the way these platforms moderate content and deal with issues such as fake news, hate speech, and online harassment.

In conclusion, Big Tech companies play a pivotal role in the platform economy, shaping its development and transforming industries through their market dominance, business strategies, and platform synergies. Their influence extends across various sectors and raises important questions about the impact of their dominance on innovation, competition, and the broader economy, as well as their role in regulation and public policy.

1.5 Research Question

Considering the complexities surrounding Big Tech's dominance, this thesis aims to address the following overarching research question:

What are the driving factors behind the rise of Big Tech companies, and how do their monopoly power and business practices affect competition, innovation, and consumer welfare, while posing unique antitrust and regulatory challenges that require reevaluation of existing policies and potential alternative measures?

1.5.1 Objectives

To answer the research question, this thesis will pursue the following objectives:

1. Investigate the historical and technological factors that contributed to the emergence and rise of Big Tech companies in the platform economy.
2. Analyze the business strategies and practices of Big Tech companies, and assess their impact on competition, innovation, and consumer welfare within their respective markets.
3. Examine the key antitrust and regulatory challenges associated with Big Tech's market dominance, and review how policymakers have responded to these challenges in different jurisdictions.
4. Evaluate the adequacy of current antitrust laws and regulations in addressing the unique challenges posed by Big Tech's market power, and explore potential alternative policy measures to promote competition and protect consumer interests.

1.5.2 Significance of the Study

This study will contribute to the existing literature on Big Tech's monopoly power, antitrust issues, and their rise to dominance by providing a comprehensive analysis of the factors driving their growth and the implications of their market power for

competition, innovation, and consumer welfare. Moreover, the study will offer insights into the effectiveness of current antitrust policies and regulations in addressing Big Tech's market dominance and suggest potential alternative measures that may be more effective in promoting competition and protecting consumer interests in the platform economy. This analysis will be valuable for scholars, policymakers, and industry stakeholders seeking to understand the complexities of Big Tech's influence and the regulatory landscape surrounding their monopoly power.

1.6 Thesis Structure

The remainder of this thesis is organized as follows:

- Chapter 2: Theoretical framework - A brief explanation of the main theoretical notions used in the study.
- Chapter 3: Literature Review - This chapter will review the relevant literature on the platform economy, Big Tech's rise to dominance, and the associated antitrust and regulatory challenges.
- Chapter 4: The Rise of Big Tech Monopolies.
- Chapter 5: Case Study - Discussion of Amazon, to serve as a case study.
- Chapter 6: Case Study - Discussion of Apple Inc., to serve as a case study.
- Chapter 7: Discussions and Implications - This chapter will discuss the findings in light of the research question and objectives..
- Chapter 8: Regulatory Frameworks and Recommendations/Conclusion - This chapter will summarise the study's main recommendations.

Chapter 2
Theoretical Framework

2.1 Economic theories and models relevant to the analysis of Big Tech monopoly power and their rise to dominance.

The rise of the digital age has to some degree transformed the economic landscape. In this reshaped reality, the traditional business models as we knew them, have changed in line with the technology, creating novel structures like the platform economy. This not only has changed the way businesses operate, but has also created challenges and dilemmas for economic theorists. How should we understand market dynamics in the age when digital platforms can and have dictated the terms of the game? Is the traditional understanding of monopoly theory and its implications in the society and markets still relevant, or do we require a 'Fresh Perspective'?

Big Tech companies stand as a lighthouse in this transformation. Their rise and dominance are both inspiring and concerning at the same time. While experiencing exponential growth, they have led to significant market shifts, changing everything from consumer behaviour to innovation trends, and even transforming the way we live our lives (for better or worse).

Having such immense power concentration within a few entities, raises the questions about competition, market fairness and the topic of regulation becomes more and more pressing.

This chapter examines in detail the key economic theories and models that will inform our analysis of the monopoly power of Big Tech and their unparalleled approach to market dominance. Building our discussion on established theoretical frameworks, we seek to bridge the gap between time-tested economic theories and the unique characteristics of the digital age. In the following sections, we will explore traditional

monopoly theory, the role of network effects, two-sided markets, economies of scale/scope and etc.

The theoretical framework will be established by describing the economic theories and models relevant to the analysis of Big Tech monopoly power and their rise to dominance. Furthermore, the chapter will explain how these theories and models apply to the platform economy and the specific cases that will be examined in this thesis.

The main theories and models which will be discussed include:

1. Industrial organization theory;
2. Network effects;
3. Traditional Monopoly theory.

This foundation will provide a solid basis for understanding the factors contributing to Big Tech's market power and the antitrust issues that arise from their dominance.

2.2 Industrial Organization Theory

This economic theory provides a framework for understanding the behavior of firms and industries by analyzing their structure, conduct, and performance. It is particularly relevant for studying the monopoly power of Big Tech companies and their rise to dominance, as it helps explain key factors that shape market structure and competitive dynamics. Some important aspects of Industrial Organization Theory that apply to Big Tech include:

a. Economies of Scale and Scope

Economies of (increasing returns to) scale is one of the characteristics of digital markets that leads to winner-takes-all dynamics and tip for the market concentration and monopolization by bigger players. Such markets with increasing returns to scales,

experience decrease in their average unit cost, when sales increase. This in turn makes it harder for the new entrants to compete with the large incumbents who have already heavily invested in up-front costs.

While economies of scale are characterized by reduction in cost, by increasing the volume, economies of scope refer to a situation where efficiencies are achieved by variety of products or services. A firm having a technical expertise and access to data, may apply already existing resources into a new market with a relatively low cost.

Facebook and Google are a good example of market players who greatly benefit from this phenomenon. For instance, Google may update their Gmail services for their 200 million users, with approximately similar cost, that they would have done for thousands of users.

b. Barriers to Entry

A critical aspect that enables Big Tech companies, such as Amazon, Google, Apple, and Facebook, to preserve their market dominance is the presence of substantial barriers to entry within their respective industries. Barriers to entry refer to obstacles that hinder or obstruct new competitors from accessing a market, thereby safeguarding the incumbent firm's market position and profitability (Bain, 1956). In the context of Big Tech, multiple barriers to entry can be discerned, which prevent potential rivals from securing a foothold in their markets.

Firstly, the considerable capital investments necessitated for competition in the technology sector create a significant financial barrier for new entrants (Evans & Schmalensee, 2016). For example, Google's extensive investments in data centers, research and development, and talent acquisition render it exceedingly challenging for new search engine providers to compete at a comparable level (Varian, 2018).

On top of that, intangible factors such as intellectual property, data, and brand recognition present significant barriers to entry in the technology sector (Shapiro & Varian, 1998). Big Tech companies possess extensive repositories of user data, which they utilize to devise targeted advertising, personalized services, and sophisticated

algorithms that are difficult for new entrants to emulate (Zuboff, 2019). Moreover, the potent brand recognition and consumer trust that these companies have cultivated over time render it onerous for new market entrants to breakthrough and garner widespread user adoption (Fournier & Avery, 2011).

c. Product Differentiation

This concept refers to the process of distinguishing a product or service from competitors, thereby creating a unique value proposition and market position (Porter, 1980). In the context of Big Tech, product differentiation is evident in various forms, which contribute to their market dominance and customer loyalty.

Big Tech companies allocate significant resources to research and development to create innovative products and services, differentiating them from competitors (Lazonick & Tulum, 2011). For example, Apple's ongoing development of advanced hardware and software, such as the iPhone and iOS, has allowed the company to maintain a distinctive and premium market position (Yoffie & Baldwin, 2018).

d. Vertical Integration

Vertical integration refers to a firm's control over multiple stages of the production or distribution process, enabling the company to have a direct control over its operations, like reducing the cost and enhance market power (Porter, 1980). Vertical integration played a vital role in Big Tech’s market growth and dominance by achieving competitive advantage.

By incorporating these aspects of Industrial Organization Theory into the analysis of Big Tech's monopoly power and rise to dominance, we can better understand the factors that have contributed to their market position and the competitive dynamics of the platform economy.

e. *Lock-in and Switching Costs*

Similarly, most of the technological companies use various ‘tricks’ to lock-in their customers within their products and services and make it enormously hard for users to switch to solutions offered by competing companies. Apple is the best example of locking-in their users in their ‘ecosystem’ by bundling several services together, so that for users it will be extremely hard to abandon their products. For instance, a messaging app iMessage only works for the Apple product owners, and products like AirPods do not function as well with Android devices, as it works with Apple’s own product line. Similarly, apps purchased through iOS AppStore do not function on Android devices, and vice versa. These incompatibility issues lock in users into a particular company’s ecosystem (Iansiti & Levien, 2004), and when switching to rival products or services entails effort to learn, this creates the so-called switching cost, and more time and effort users spend for such learning, the greater the switching cost (Klemperer, 1987; Ratchford, 2001; Huang, 2016).

2.3 Network Effects

The network effect refers to a situation where the value of a service, product or platform increases with a higher number of users leveraging it. Social media networks such as Facebook and Twitter are good examples of network effects. With more people joining these platforms, more content and value they create, which in turn attracts more users to join it. As Mark Zuckerberg's character portrayed by Jesse Eisenberg describes it in “The Social Network " movie: “Users are interconnected, that is the whole point. College kids are online, because their friends are online and if one domino goes, the other dominos go”. Similarly, as Facebook, most of today’s Big Tech companies have been heavily influenced by network effects. The value provided to users increases as they become bigger and attract more users. Amazon offers much greater options for customers if more sellers are represented in its platform and vice versa. App stores controlled by Apple and Google respectively, are much more valuable with more developers offering their apps to users, and in the same way

developers are more interested in investing more in their products and services with a greater number of users using these platforms.

2.3.1 Direct network effects

However, not all network effects work the same. For instance, social media companies experience the so-called within-group (or direct) network effects (Economides, 1996), where the platform primarily benefits when the number of users increase, resulting in the platform itself to grow. In other words, users find it attractive if the activity level within the platform is high. However, there also can be negative direct network effects, as in road congestion and traffic jams (Downs, 1962). The more drivers choose the same road at a particular time, leading to the slower traffic at the road.

2.3.2 Indirect network effects

Cross-group (indirect) network effects occur when a platform depends on two or multiple user groups by matching supply and demand between buyers and sellers (Amazon) (Hagiu, 2006), users and software developers (Google and Apple App Stores) (Rochet & Tirole, 2003), and consumers with advertisers (Facebook and Google) (Evans, 2003). Unlike with the direct network effects discussed earlier, platforms with cross-network effects highly depend on the number of users in the other group. However, once a platform gains dominance in the corresponding markets, these network effects usually become self-sustaining as participants on each side help generate participants on the other (Barwise & Watkins, 2018).

Moreover, platforms with indirect network externalities experience the so-called “chicken and egg” dilemma (Caillaud & Jullien, 2003), where companies should decide whether to attract buyers or sellers first. A good example could be game console platforms such as the PlayStation store by Sony (Clements & Ohashi, 2005), in which players purchase games produced by independent game producers. Gamers would buy consoles by Sony only if there are enough games available in the online platform, and likewise, game producers would invest in new games if only there is a sufficient number of users willing to buy it.

2.4 Traditional Monopoly Theory

The concept of a monopoly is believed to have been around for centuries. However, the original meaning of the word Monopoly derives from Greek, as a combination of two words, “mono”, meaning “one” and “polen” meaning “to sell”. In the seventeenth century, sir Edward Coke, defined monopoly as allowance by the King to any person/entity for the sole buying, selling of the goods (Wikipedia). Later on, in 1890, A. Marshall, in “Principle of Economics”, popularised the concepts of supply, demand and market equilibrium and how a single supplier of goods can dominate the market by exerting control over supply and consequently the price, leading to the decrease of consumer welfare. Since then, the concept of monopoly has been at the centre of attention for discussions regarding competition and policy making.

While some scholars have discussed the potential abuses by the monopolists as discussed in the works of Galbraith in “The New Industrial State” (1967), others like Schumpeter as mentioned in “Capitalism, Socialism, and Democracy” (1942), discussed the ability of monopolists to deliver certain efficiencies.

As defined by Posner, in “Antitrust Law” (1976), monopoly represents a market which is dominated by a single player, a scenario that has broad implications for other players in the market (hence, competitors), consumers and the economy as a whole.

2.4.1 Characteristics of Traditional Monopolies

Many scholars such as Marshal, Robinson, Chamberlain, Bain and etc. have discussed the characteristics of monopolies in their respective studies, offering a deliberate understanding of the implications of monopolistics markets and its characteristics. These characteristics provide a robust framework to understand how these firms and markets behave, however with the rise of Big Tech, a new lens might be required in order to understand the new realities. For now, let’s have a look at the basic characteristics of a monopoly:

1) Single Seller Dominance

This concept implies a market structure, in which one entity or a firm might become so dominant that it can have an important, if not total control over the market. By having this type of control, the firm can influence the supply and play with prices, as it deems necessary. With having little or no competition at all, the monopolist can dictate the prices, eventually leading to higher cost for consumers. Even if consumers would be dissatisfied with the product or services offered by the monopolist, in most cases they would have little or no choice at all, as the monopolist would try to create different barriers for the newcomers to enter the market, and potentially challenge the monopolist.

2) High Barriers to Entry

Understanding of the concept of barriers to entry, is crucial in studying monopolistic markets and its implications. Mainly, these barriers refer to a situation where it becomes difficult for new players to enter the market and compete fairly. Traditionally, these barriers might be financial (as there could be substantial capital requirements), technological (having the know-how, or proprietary technology), or even in some cases regulatory. Bain in his study (1956) , discussed these constraints and its role in protecting monopolists' market position.

If we discuss the financial barriers, the markets with huge initial investments to enter the business might be an example. Historically, industries such as utilities, automotive manufacturing, railroad logistics, due to high capital intensity, deterred the new entrants. Analysing the economy of the United States in the 19th and 20th century, the good examples for such phenomena could be the railroads and automobile manufacturing. The railway industry required a vast amount of capital investment, in infrastructure including track, stations and trains. Similarly for the automotive industry, establishing an enterprise required huge amounts of resources, for factories, supply chain and Research and Development. Only those who could gain sufficient

resources, could solidify their market positions making it harder for new smaller entrants.

3) Lack of Close Substitutes

Another one of the definitive characteristics of a monopoly is unavailability or lack of close substitutes for a specific product or service. In these types of situations, usually even when the consumers are not satisfied with what the monopolist is offering, they would have little or no choice at all, but to purchase or use the firm's offering, as no other viable alternative exists in the market. As mentioned by Robinson (1933), in his work "The Economics of Imperfect Competition", monopolies thrive in the situations where the product has some unique features or differentiates itself, so that in consumers' eyes, a product becomes irreplaceable.

This can be a result of different reasons, such as strong brand identity or innovative product features. In some cases, a strong brand association can potentially act as a barrier, even though from a functionality perspective similar products exist in the market. Similarly, the monopolist's product or service could have unique features that other players haven't replicated.

4) Price Maker Status

When we usually think of a monopoly power, the first thing that comes to our mind is the ability of the firm to influence, if not directly set the prices of products or service, without fearing the consequences, typical of highly or more competitive markets. By default, monopolistic players in the market enjoy a luxury that most other firms in the competitive market couldn't normally have. In most cases, they set the prices based on their production costs, desired margins and demand. As mentioned by Stigler (1968), in his research "The Organization of Industry", monopolists could facilitate this power to increase or inflate prices, which in turn, lead to deadweight losses and potential consumer exploitations. This phenomenon wasn't just an economic theory not applicable in real life, but real world scenarios. One of the best examples of such occurrences is: Standard Oil in the 20th century - perhaps the most iconic example of

a monopoly in United States history, if not in the world. During its peak, it controlled 90% of oil refineries in the U.S., and had power and influence to set up the prices or undercut competitors, with a sole reason of driving them out of the market and raising prices once the competition was deterred (Tarbell, 1904).

5) Reduced Consumer Sovereignty

One of the main concerns related to the monopolies was the idea that firms could potentially limit consumer sovereignty. Monopolies, by default, try to reduce the spectrum of choices available to consumers (Chamberlain, 1933). In a situation where a single monopolist has the entire market, consumers might often find themselves pushed into purchasing products or services that potentially would not align with the ideal preferences, and be subject to what the monopolist deems optimal, so that they can maximise its own profits. You might think finding a real life example of such a concept would be impossible. However, until recently, the automotive industry in Uzbekistan provided an interesting example of reduced consumer sovereignty. Uzbekistan's automotive industry has been dominated by one company, UzAuto (previously known as Uzavtosanoat). It has had a de facto monopoly over the domestic market, producing vehicles under the Chevrolet brand name. Due to strict regulations and import tariffs, consumers were forced to purchase the cars produced by UzAuto. This led to an interesting phenomena, in which due to long waiting times for the new cars, a secondary market was established, often leading to an arbitrage, a situation in which the prices in the secondary market were higher than the official listed one, consequently leading to a deadweight loss in the market.

2.5 Redefining Monopolies: The Limitations of Classic Theories in the Age of Big Tech

In the traditional thought of economics, the monopoly theory has been the backbone to understand the monopolists' market dominance and implications (Posner, 1976). Historically, these theories provided a kind of a tool, with which the monopolistic behaviours and their repercussions were studied (Schumpeter, 1942). However, as we

analyse the transition to the 21st century, it becomes evident that a paradigm shift has already happened. The emergence of Big Tech was not from factories or railroads as before, but from algorithms. These players, often labelled as Big Tech, operate on principles and dynamics that challenge our traditional understanding of monopolies (Khan, 2017).

In this chapter, the limitations of classic monopoly theories will be briefly discussed, underlining the key differences in monopolists' characteristics we discussed earlier versus in the era of Big Tech. Furthermore, we discuss the fact that there is a need to re-evaluate and update the theories and regulations, in order to better comprehend the complexities of todays' digital monopolies.

2.6 Historical Perspective on Monopoly Theories

Even before the actual term "monopoly" entered the stage, early civilizations, such as Romans, Chinese and Greeks experienced and addressed market dominance in their unique ways. Whether it was state created monopolies or exclusive trading licences, these civilizations in their own way struggled in balancing between promotion of trade and prevention of unparalleled concentration of power (Braudel, 1982).

With the Industrial Revolution entering the stage, it had impacted and transformed economies and whole societies. As industries expanded at never seen before pace, the foundation of modern monopoly theories were born. In order to understand the new realities of powerful industrialists, the need for a theoretical framework arose and seminal works on monopoly theories emerged (Schumpeter, 1942).

2.6.1 Antitrust movements, Roosevelt and the Sherman Act

The unparalleled power of industrial titans in the U.S led to public disappointment and demands for regulation. These entities were mostly large corporations which were dominating several industries, such as steel (U.S. Steel), railroad (Union & Central

Pacific) and oil (Standard Oil) (Carey, 2008). They were often able to set prices and stifle competition. Furthermore, big corporations had enormous economic and political influence, often having state legislators, judges and senators in their payroll.

In response to the public demand and outcry, the Sherman Antitrust Act was passed in 1890. The idea was to prohibit anti-competitive practices, such as price-fixing and market allocation. In addition, the act gave power to the federal government to break up monopolies (Peritz, 1996).

However, with the persistence of the challenges posed by those corporations, in his 1901 State of the Union message, President Theodore Roosevelt famously expressed the urgent and further need to address the issue of monopolies (Politico, 2019). Later on, recognizing the challenges and the possible enforcement issued of The Sharman Antitrust Act, the Congress followed by passing two more antitrust laws in 1914: Federal Trade Commision Act (which facilitated the creation of Federal Trade Commision, known as FTC) and the Clayton Antitrust Act. With the introduction of these acts, the government's ability to regulate monopolies strengthened.

The Shermand & Clayton Antritrust Acts and the Federal Trade Commision Act form the basis of the antitrust law in the United States (Investopedia). They have played an important role in preventing monopolies and ensuring that markets remain competitive and efficient.

However, the 20th century brought its own challenges. The globalisation and subsequently the rise of big multinational corporations required a re-evaluation of traditional monopoly theories (Hymer, 1976). Consequently, the focus shifted from market dominance perspective, to include practices that can affect competition and reduce innovation, in turn potentially harming consumers on a global scale (Posner, 1976).

2.7 Monopolies in the The Digital Age

The upcoming of the digital age elevated the rise of entities that defied the traditional notions. Even though Apple had already established itself long before the digital age, its continuous innovation and dominance, alongside the companies like Google, Amazon and Facebook helped it and others to gain a power and influence comparable to the industrial titans of the old.

On the other hand, the roots of the dominance of Big Tech - algorithms, data and network effects, were somehow new. These companies operate in globalised multi-sided markets, serving different kinds of user groups across the world.

As stated in the Economist article (2017), "The world's most valuable resource is no longer oil, but data". This notion underlines the importance of data and information in the digital age. In today's world, the entities that control it, have a significant competitive advantage over others. In some cases, some tech giants, in theory, can have more detailed information regarding each citizen of any given country, that could potentially rival surveillance depicted in George Orwell's "1984" - a scenario that would have been considered a pure science fiction, just a few decades ago.

That being said, with new technologies come the complexities of regulating these tech giants. Most antitrust regulators face challenges, as traditional metrics of market power and competition might not directly apply to the tech industry of today. As the very nature of their business operations, which in some cases offer their services for free, poses unique challenges to traditional monopoly theories. This in turn, raises the notion of updating our understanding of competition, consumer welfare and requires a new approach to regulation of these types of companies.

2.7.1 Traditional Monopoly Characteristics vs Big Tech Dynamics

Earlier, we have discussed the several key characteristics that traditionally defined monopolies. When applied in today's world, especially to Big Tech giants, these characteristics reveal both parallel and sharp contrasts:

- *Single Seller Dominance:* Traditional monopolies were most often the sole providers in their respective markets. For example, one utility provider could have been the sole entity and source of electricity in a given region. In today's digital world, companies like Google in search and Meta in social networking have a huge influence and power. According to some measures, Google handles more than 85% of search queries worldwide (Statista, 2023), while Meta's market share in the social media spectrum is believed to be around 80% (Statcounter, 2023). Furthermore, Meta can exert influence on the digital ad sector, through capturing an extensive amount of data from its different platforms. This type of dominance creates unique forms of challenges that differ from the monopolies of the past.

- *High Barriers to Entry:* In traditional industries, the barriers could be due to high capital investment costs and regulatory approvals or intellectual property protections. As discussed earlier, railroads with its infrastructure demands, are a classic example, requiring immense capital, knowledge and support from the government. However, today's Big Tech companies face a different landscape. While there is still a need for capital and expertise, today's biggest source of barriers are network effects. By taking advantage of network effects, they make it harder for newcomers to successfully compete against them.

- *Lack of Close Substitutes:* Traditional monopolies offered unique sets of products or services, which could not be easily replicated by competitors, due to know-how, or sometimes regulatory restrictions. A classic example could be patented medicines, leaving consumers no other choice, but to purchase it from

the monopolist. In contrast, Big Tech is different. They in most instances, don't provide unique products or services. Think of Amazon, with its convenient shipping, vast selection of goods and services with competitive prices. If we combine these factore, it makes it incredibly hard for any other retailer to propose a directly substitutable service, even though the same range of products might be available elsewhere. It is not solely about the product, but the whole experience, the efficiency and value (Khan, 2017) which makes a difference.

- *Price Maker Status:* Traditionally a "price maker" status allowed the corporation such as Standard Oil, to dictate the prices due to their big market share (Chernow, 1998), however the concept has evolved in the era of Big Tech. Even though consumers don't directly pay to use popular services like Facebook/Instagram by Meta, or Google Search, these players have a significant level of leverage in the markets like online advertising. Similarly, Apple and Google with their marketplaces, have full control over the price-making decisions. Apple in particular has faced multiple criticism from several players in the market, contesting the disproportionate commission it charges from app developers (The New York Times, 2020).

- *Reduced Consumer Sovereignty:* Previously, in the traditional monopolistic situations, consumers often had limited choices available. However, in today's Big Tech reality, this is not exactly the case. Today, there are several varieties of applications, platforms, operating systems and services and you might think consumer sovereignty is in safe place. Nevertheless, users on platforms like Meta's Facebook or Instagram usually find themselves 'handcuffed' by algorithmically served content. Usually most of the content we see there is often a result of machine learning algorithms, specifically tailored in order to keep users on the platform, instead of a genuine reflection of their broader interests of choices (Zuboff, 2019). At some point, as these platforms gain so vast amounts of data about a user, some even argue that these tech giants know

more about any given individual, than users about themselves. In addition, monopoly over the users data, held by tech giants, further limits the ability of consumers to switch to alternative platforms.

2.8 Monopoly 2.0: Contrasting Classic Monopolies with Today's Big Tech

Monopolies throughout history, in most cases have adapted to societal changes and advancements. Furthermore, historically, monopolies were more marked with single firm dominance, however now we see more nuanced dynamics of Big Tech.

Traditional monopolies had somewhat simple relationships with their consumers, setting up the prices and the consumer, like it or not, had no other choice but to comply. On the contrary, Big Tech monopolies operate on a different plane. By offering their services for free, they have, in some cases, become beloved by their consumers (The Hill, 2019). However, the important difference between these types of monopolies lies in the area of consumer choice. While traditional monopolies tended to offer limited options for consumers, Big Tech offers a variety of it. But as an old saying mentions: "The only free cheese is in a mousetrap". The choices often offered by Big Tech, are organized in such a way that while consumers think that they are in control of the choices, while in reality, algorithms and data-driven offerings, often dictate their preferences.

As discussed earlier, the shift in the behaviour of monopolistic entities, poses a new kind of challenge for the regulators, policymakers and society as a whole. In today's reality, the main question is no longer about preventing a single seller from dominating the market and increasing the prices as they deem necessary, but understanding and regulating the unseen forces that shape the digital age. It is becoming more and more evident that the definition of monopolies needs to be reconsidered, and more importantly regulatory frameworks should take into account fair competition, consumer and stakeholders' sovereignty in a quickly evolving digital landscape.

Chapter 3
Literature Review

With the rise of Big Tech, the topic of the platform economy has become a prominent area of research.

To better understand the increasing interest in the research domain concerning Big Tech, monopoly power, and the platform economy, a keyword search was performed on ScienceDirect using the terms 'Big Tech,' 'Monopoly,' and 'Platform Economy.' The findings showed a significant growth in the number of published papers on these subjects in recent years.

Table 1:

Period	Number of Papers
Before 2010	192
2010 - 2023	636

Number of papers published before 2010 and after 2010 to 2023.
Source: www. ScienceDirect.com

As it can be seen from Table 1, the quantity of papers published on the subject has significantly increased in the last decade. Until 2010, only 192 papers were published, while between 2010 and 2023, 636 papers were published respectively. This data clearly indicates a growing interest in the study of Big Tech companies, monopoly power, and platform economy, highlighting the importance and relevance of this research area.

This literature review aims to provide an overview of existing research on the platform economy, with a particular focus on the role of Big Tech companies. It will also discuss prior research on monopoly power, anti-competitive practices, potential negative consequences, and the rise of Big Tech.

3.1 Platform Economy and the Role of Big Tech Companies

Research on the platform economy has centred on the business models and strategies of Big Tech companies, which have been vital in shaping the development of the platform economy as we know it today. Notable academic papers include Gawer and Cusumano (2002), which explored platform leadership and how players such as Intel, Microsoft, and Cisco boosted the industry innovation. Rochet and Tirole (2003) analysed the notion of two-sided markets and studied the pricing strategies of platforms, while Caillaud and Jullien (2003) examined competition among intermediation service providers in these markets.

Numerous works have analysed the impact of several Big Tech companies, such as Amazon (Khan, 2017), Apple (Yoffie & Fisher, 2020), Google (Levy, 2011), and Facebook (Nielson, 2020). These studies highlight the business strategies, market dominance, and in some cases the potential negative consequences associated with these companies.

In her paper, Khan (2017) analysed Amazon's business practices, mentioning the company's strategy in online retail by leveraging dominance, while expanding in other sectors. Similarly, Yoffie & Fisher (2020) provided a broad analysis of Apple Inc's trajectory under its CEO Tim Cook, highlighting the company's transition from a hardware-centric to digital related services.

Overall, these papers provide an overview of Big Tech's position in the platform economy, by exploring their business strategies, while discussing antitrust concerns and challenges.

3.2 Monopoly Power and Anti-Competitive Practices

A significant amount of research has focused on monopoly power and anti-competitive business practices performed by the biggest players in the platform

economy. A common thread among studies is the analyze of monopolistic tendencies of the Big Tech, and potential risk they pose to competition, innovation and democracy.

Khan, in her paper “The Separation of Platform and Commerce”, discusses the potential conflict of interest common to the domain of digital platforms, which in some cases operate across multiple business lines. Khan mentions the fact that platforms such as Amazon, not only control the marketplace itself, but also sell their own products on it, in turn competing with other sellers in the marketplace. She argues, situations like this can easily damage competition and innovation, and as a solution calls for potential separation of platforms from commerce.

Wu (2018) underlines parallels between monopolies of the past and today’s Big Tech giants. Furthermore, Wu emphasises the need for broader and stricter enforcement of antitrust laws, while proposing that the current regulatory framework might be inadequate to address the challenges brought by the Big Tech. Similarly, Tapling (2017) discusses the unchecked power held by these tech giants, highlighting the role of the platforms in spreading misinformation.

Moreover, Geradin & Katsifis (2020) discuss Apple’s App Store, arguing on its potential antitrust business practices and suggesting that respective authorities should have a closer look on how Apple treats third party app developers with their 30% tax on in-app purchases.

These works provide a brief view of the challenges posed by Big Tech’s monopoly power in the platform economy. They highlight the potential anti-competitive practices of these tech giants, and urge for regulatory reforms, in order to ensure fair competition and protect democratic values.

3.3 Potential Negative Consequences and the Rise of Big Tech

Furthermore, research on the platform economy has also discussed the potential negative consequences associated with the rise of Big Tech. Mayer-Schönberger and Cukier (2013) discussed the implications of big data and its effects on society, while van Dijck, Poell, and de Waal (2018) examined public values in a connective world and the challenges posed by platform society.

Several studies, including those by Introna and Nissenbaum (2000) and Zhang et al. (2018), have discussed the possible negative issues such as privacy, data collection, and the potential abuse of market power. These papers try to emphasize the importance of continued research into the consequences of Big Tech's dominance and the potential implications for society at large.

To sum up, these studies underline the multifaceted challenges posed by Big Tech. They discuss that there is a need to have a balanced approach in updating regulatory frameworks, so that benefits of these platforms could be harnessed and at the same time mitigating its potential negative consequences.

3.4 Gaps in the Literature and Contributions to the Field

Although the existing literature offers insightful analysis into the platform economy and the function of Big Tech companies, there are still some areas in the research that require further investigation. More in-depth discussion is required, specifically regarding the intricate relationships that Big Tech firms have with their competitors, regulators, and customers. To address the issues brought on by Big Tech's market domination, research is also required to examine the effectiveness of present antitrust laws and consider potential new regulatory frameworks.

This research aims to contribute to the field by examining the relationships between Big Tech companies, their ecosystems, and the broader market environment. This

study will analyze the competitive dynamics among Big Tech firms, as well as their interactions with other stakeholders, such as regulators, policymakers, and consumers. Moreover, this research will briefly examine the consequences of Big Tech's market power on innovation, competition, and consumer welfare.

3.5 Regulatory Approaches and Policy Implications

Another area that warrants further exploration is the regulatory approaches and policy implications associated with Big Tech's influence on the platform economy. Several studies have discussed the need for new regulatory frameworks to address the challenges posed by these companies (Khan, 2020; Wu, 2018). However, there is still limited research on specific regulatory strategies and their potential effectiveness in curbing anti-competitive behavior and promoting consumer welfare.

This research will contribute to the literature by examining the effectiveness of existing antitrust policies and exploring potential alternative regulatory approaches. It will briefly analyze the pros and cons of different policy options and assess their potential impact on the platform economy and its stakeholders. The study will also investigate the role of international cooperation and coordination in shaping regulatory responses to Big Tech's market dominance.

3.6 The Future of the Platform Economy and Big Tech

As the platform economy continues to evolve, it is crucial to understand the potential trajectories of Big Tech companies and their impact on various industries and society at large. While existing research has provided valuable insights into the rise of these companies and their influence on the platform economy, there remains a need for more forward-looking analysis that anticipates future developments and trends.

This research will contribute to the literature by examining potential scenarios for the evolution of the platform economy and the role of Big Tech companies within it. By

incorporating the findings from the analysis of competitive dynamics, regulatory approaches, and policy implications, this study will provide a comprehensive outlook on the future of the platform economy and offer recommendations for policymakers, regulators, and industry stakeholders.

3.7 Conclusion

The literature review has provided an overview of the existing research on the platform economy, focusing on the role of Big Tech companies, monopoly power, anti-competitive practices, potential negative consequences, and the rise of Big Tech. The review has identified gaps in the literature and highlighted areas where this research will contribute to the field. By examining the complex interactions between Big Tech companies and their ecosystems, evaluating the effectiveness of current antitrust policies, exploring potential new regulatory frameworks, and anticipating future developments in the platform economy, this research aims to provide valuable insights for policymakers, regulators, and industry stakeholders.

Chapter 4
The Rise of Big Tech Monopolies

In this chapter, we will discuss four of the most influential Big Tech companies - Amazon, Facebook (Meta), Apple, and Google - discussing their history and evolution, business models and competitive advantages, and the impact they have had on their respective industries.

4.1. Amazon

4.1.1 History and evolution of the company

Amazon was founded in 1994 by Jeff Bezos as an online bookstore. The company has since grown into a diversified retail and technology giant with operations around the world, reaching the Market capitalization of 1.131 trillion USD (Yahoo Finance, 2023).

Previous Close	112.18	Market Cap	1.131T
Open	112.16	Beta (5Y Monthly)	1.26
Bid	109.85 x 1400	PE Ratio (TTM)	262.52
Ask	109.87 x 800	EPS (TTM)	0.42
Day's Range	109.32 - 112.64	Earnings Date	Jul 26, 2023 - Jul 31, 2023
52 Week Range	81.43 - 146.57	Forward Dividend & Yield	N/A (N/A)
Volume	49,852,671	Ex-Dividend Date	N/A
Avg. Volume	60,050,911	1y Target Est	133.72

Amazon's early success was based on its use of technology to improve the customer experience, with features such as customer reviews, personalized recommendations, and 1-click ordering (Stone, 2013). Over time, Amazon expanded its product offerings to include music, movies, electronics, and other consumer goods, and also moved into new areas such as cloud computing, streaming media, and grocery delivery (Cohan, 2019).

4.1.2 Business model and competitive advantages

Amazon's business model is based on a customer-centric approach that emphasizes low prices, fast delivery, and a seamless shopping experience (Cusumano, 2019). One of Amazon's key competitive advantages is its vast network of fulfillment centers and distribution hubs, which enable it to offer fast and reliable shipping to customers around the world (Porter, 2017). Another advantage is Amazon's use of data and machine learning algorithms to optimize its operations and improve the customer experience, including personalized recommendations, targeted marketing campaigns, and predictive analytics (Evans, 2018).

4.1.3 Impact on retail industry

Amazon has had a significant impact on the retail industry, both online and offline. On the one hand, Amazon has revolutionized e-commerce and disrupted traditional brick-and-mortar retail stores, by offering a wider selection of products at lower prices, and providing a more convenient and personalized shopping experience (Cusumano, 2019). On the other hand, Amazon's dominance in the online retail market has also raised concerns about competition and the impact on small businesses. Critics argue that Amazon's size and market power give it an unfair advantage, and that it has used its leverage to extract favorable terms from suppliers and competitors (Lazonick & Hopkins, 2019).

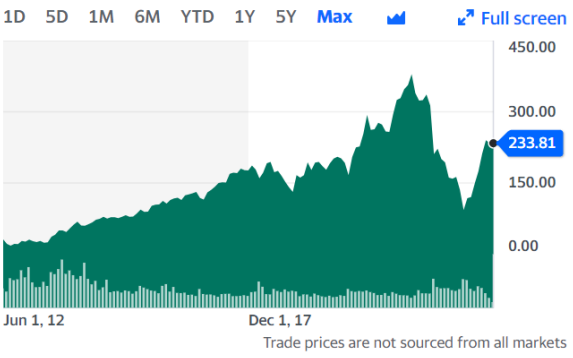
Overall, Amazon's rise to dominance in the retail and technology industries has been driven by a combination of innovation, customer focus, and scale. While Amazon has faced criticism and regulatory scrutiny over its market power and competitive practices, its impact on the global economy and consumer welfare is undeniable (Cusumano, 2019).

4.2 Meta (formerly Facebook)

4.2.1 Historical Development and Evolution

Meta, formerly known as Facebook, was founded by Mark Zuckerberg and his college peers at Harvard University in 2004, initially serving as an exclusive social networking platform for college students (Carlson, 2010). In 2021, the company rebranded to Meta, emphasizing its commitment to constructing the metaverse (Statt, 2021). The 2010 David Fincher film, The Social Network, offered a dramatized account of Facebook's inception and the disputes among its founders, heightening public interest and further solidifying the platform's cultural significance (Cieply & Barnes, 2010). By opening registration to the general public in 2006, Meta experienced exponential growth, boasting billions of global users by the 2010s (Phillips, 2012). Over the years, Facebook (Meta) has grown significantly, and as of 2023, has a market capitalization of 0.59 trillion USD (Yahoo Finance, 2023).

Previous Close	235.79	Market Cap	597.321B
Open	236.74	Beta (5Y Monthly)	1.20
Bid	233.45 x 1100	PE Ratio (TTM)	28.90
Ask	233.79 x 800	EPS (TTM)	8.09
Day's Range	231.45 - 236.96	Earnings Date	Jul 25, 2023 - Jul 31, 2023
52 Week Range	88.09 - 244.92	Forward Dividend & Yield	N/A (N/A)
Volume	16,161,447	Ex-Dividend Date	N/A
Avg. Volume	26,164,380	1y Target Est	270.19



4.2.2 Business Model and Competitive Advantages

Meta's primary source of revenue stems from advertising, capitalizing on user data and algorithms to deliver targeted ads (Zuboff, 2019). The platform's extensive network effects bolster its dominance in the social media market; as each user increases the platform's value, it attracts more users, thereby reinforcing its market position (Barwise & Watkins, 2018).

4.2.3 Impact on Social Media and Online Advertising

Meta's pervasive influence has substantially altered the way individuals communicate and disseminate information online, raising concerns about the spread of fake news (Allcott & Gentzkow, 2017) and privacy erosion (Zuboff, 2019). Additionally, Meta's hegemony in the online advertising market has disrupted traditional advertising channels, with advertisers increasingly diverting resources to digital platforms to engage target audiences (Evans, 2009).

4.3. Apple

4.3.1 Historical Development and Evolution

Apple Inc., founded in 1976 by Steve Jobs, Steve Wozniak, and Ronald Wayne, started as a PC hardware company (Isaacson, 2011). Over the years, Apple has turned into a leading consumer electronics and services corporation with a Market Cap over 2 trillion USD (Yahoo Finance, 2023).

Previous Close	173.51	Market Cap	2.73T
Open	173.62	Beta (5Y Monthly)	1.30
Bid	172.40 x 1000	PE Ratio (TTM)	29.25
Ask	172.40 x 800	EPS (TTM)	5.90
Day's Range	171.00 - 174.06	Earnings Date	Jul 26, 2023 - Jul 31, 2023
52 Week Range	124.17 - 176.15	Forward Dividend & Yield	0.96 (0.56%)
Volume	45,442,695	Ex-Dividend Date	May 12, 2023
Avg. Volume	59,061,688	1y Target Est	163.50

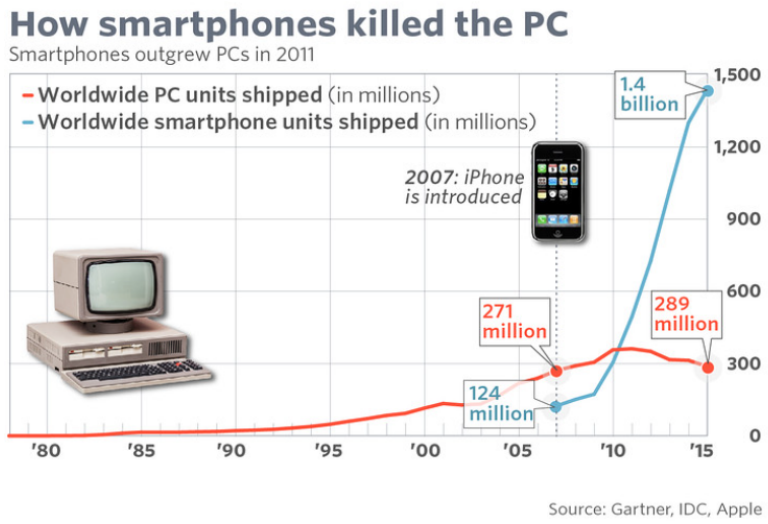
Nowadays, Apple's product portfolio includes: iPod, iPhone, iPad, and Apple Watch, as well as services such as the App Store, iCloud, and Apple Music (Yoffie & Baldwin, 2018).

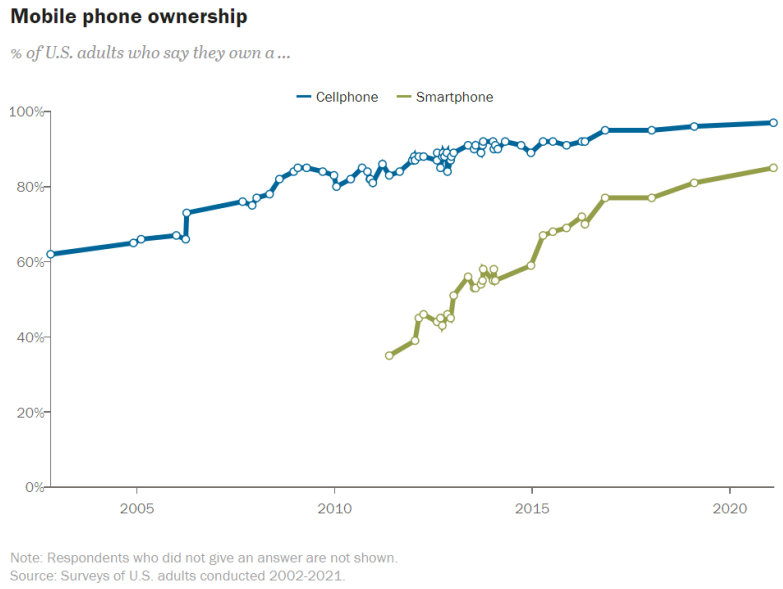
4.3.2 Business Model and Competitive Advantages

A critical component of Apple's success is its closed ecosystem, which seamlessly integrates hardware, software, and services to create an unparalleled user experience and foster customer loyalty (Iansiti & Levien, 2004). The company's commitment to design and innovation allows it to command premium prices for its products, resulting in high profit margins and a strengthened market position (Lazonick & Tulum, 2011).

4.3.3 Impact on the Technology and Mobile Industries

As a leading player in the market, Apple has significantly influenced the way individuals use and interact with technology. The introduction of the iPhone in 2007 boosted the rise of mobile devices and contributed to the decline of conventional PCs (Gartner, 2019).





https://www.pewresearch.org/internet/fact-sheet/mobile/?tabId=tab-7cfdecc4-bb29-4a14-96f5-5ba4acd5c1a9-chart

Apple's dominance in the mobile device market has led other manufacturers to adopt its design principles and business strategies, spurring competition and driving innovation within the industry (Yoffie & Baldwin, 2018). During the unveiling of the first iPhone, Steve Jobs acknowledged Apple's influence in revolutionizing various industries, stating, "Some companies are lucky to produce one industry-altering product; Apple was lucky enough [to create] a couple of those..." (Jobs, 2007). This statement underscores Apple's enduring commitment to innovation and its consequential impact on the technology landscape.

4.4. Google

4.4.1 History and Evolution of the Company

Google was founded in 1998 by Larry Page and Sergey Brin, which began as a search engine derived from a Stanford University research project (Vise & Malseed, 2005). Since then, Google has grown into a tech giant with a Market Cap of over 1.4 trillion USD (Yahoo Finance, 2023).

Previous Close	116.90	Market Cap	1.422T
Open	117.00	Beta (5Y Monthly)	1.10
Bid	117.79 x 1300	PE Ratio (TTM)	24.93
Ask	117.80 x 800	EPS (TTM)	4.73
Day's Range	116.55 - 118.19	Earnings Date	Jul 24, 2023 - Jul 28, 2023
52 Week Range	83.45 - 123.26	Forward Dividend & Yield	N/A (N/A)
Volume	31,293,778	Ex-Dividend Date	N/A
Avg. Volume	28,572,777	1y Target Est	127.22

https://finance.yahoo.com/quote/GOOG/

Google (now Alphabet) currently offers a wide variety of products and services, such as Google Cloud for cloud computing, Google Suite for software, Google Pixel and Nest devices for hardware, and platforms like Android and YouTube (Levy, 2011).

4.4.2 Business Model and Competitive Advantages

Google's primary source of revenue is through its advertising-based business model, using search algorithms and user data to deliver personalized ads (Ghosh, 2018). Google Ads and AdSense are the platforms that help advertisers reach their target audience effectively. Google's 90% global market share in the search engine market (StatCounter, 2021) allows it to monetize search traffic and maintain its dominant position.

Google gathers vast amounts of data and uses its sophisticated algorithms and AI models to provide highly focused and targeted advertising, which also helps to improve its products and services. This creates a reinforcing cycle that strengthens its standing in the market (Zhang et al., 2018).

4.4.3 Impact on Search and Online Advertising

Google's industry altering approach to online search has significantly changed how people find and access information, leading to the development of personalized search results (Introna & Nissenbaum, 2000). Products such as Google Maps, Google Scholar, and Google News have further changed how we navigate with information on the web (Levy, 2011).

Becoming one of the biggest players in the online advertising market, Google has disrupted traditional advertising channels. As a consequence, leading the industry to adopt more targeted and data-driven advertising strategies (Evans, 2009). All this has increased the efficiency and effectiveness of online advertising campaigns, meanwhile raising concerns regarding privacy and potential market power abuse (Goldfarb & Tucker, 2011).

Chapter 5
Case Study: Amazon

5.1 Introduction

In this chapter and next chapter, we'll deep dive into the complex dynamics of two of the world's most influential Big Tech companies: Amazon and Apple. These tech giants, over time have become integral part of the global platform economy (Kenney & Zysman, 2016). Furthermore, there is a need for an in-depth examination to understand their rise, their strong market positions, and the business practices they employ in order to maintain their dominant positions (Lazonick & Mazzucato, 2013).

Each case study will offer a comprehensive analysis of the respective company's rise to dominance in the tech world. We'll investigate the nuances of their positions within the platform economy, dissect their market power (Rochet & Tirole, 2003), and scrutinize any anti-competitive practices they may have engaged in (Khan, 2017).

Furthermore, we'll examine the potential adverse consequences of their monopoly power, such as stifling innovation (Bessen & Meurer, 2008), causing consumer harm (Gal & Rubinfeld, 2016), or creating market distortions (Furman et al., 2019).

Through this investigation, we aim to shed light on how these giants have come to define the contemporary platform economy and the implications of their monopolistic powers (Ezrachi & Stucke, 2016). Let's venture into the realm of Big Tech.

5.2.1 Amazon's Position in the Platform Economy

Amazon holds a prominent place in the platform economy, serving as an online marketplace that connects buyers and sellers globally. Its vast product offerings, customer-centric policies, and advanced use of technology have enabled it to become a one-stop-shop for customers' needs (Cusumano, 2019). Furthermore, with its

successful ventures into cloud services (AWS), entertainment (Amazon Prime), and AI technology (Alexa), Amazon has solidified its place at the helm of the platform economy (Kenney & Zysman, 2016).

As one of the leading players in the platform economy, Amazon's influence is undeniable. It has established itself as a leading online marketplace, commanding a significant portion of the global online retail market. As of 2022, Amazon's e-commerce market share in the United States alone was estimated to be around 39% (eMarketer, 2022). This is a considerable portion, considering the fact that the next largest competitor, Walmart, accounted for just 7% of the market (eMarketer, 2022).

Amazon has diversified its product and service offerings over the years, extending its reach across various industries. It has become a one-stop-shop for consumers' needs, offering everything from books and electronics to groceries and clothing (Cusumano, 2019). Its foray into digital products and services, such as streaming video and music (via Amazon Prime), cloud computing services (via Amazon Web Services or AWS), and AI-powered home devices (via Alexa), has allowed it to maintain a strong presence across multiple sectors (Kenney & Zysman, 2016).

In fact, AWS has turned out to be a massive success for Amazon, accounting for about 12% of its total revenue in 2022 but contributing to a significant 63% of its operating income, given its high margins (Amazon, 2022). AWS's revenue has been growing rapidly, with a reported year-over-year growth of 37% in 2022 (Amazon, 2022). Moreover, AWS dominates the cloud services market with a 32% market share, outpacing its nearest competitor, Microsoft's Azure, which holds a 20% market share (Canalys, 2022).

Amazon's customer-centric policies and advanced use of technology have been instrumental in its success. The company has been a pioneer in using data analytics and machine learning to personalize the customer experience, making it a leader not just in e-commerce but also in technology and innovation (Cusumano, 2019).

Furthermore, Amazon's robust performance and expansion in recent years are not limited to the United States. The company has been scaling its operations globally, establishing a strong presence in key international markets. For instance, Amazon is the leading e-commerce platform in key European markets like the United Kingdom and Germany, with respective market shares of 30% and 25% in 2022 (Statista, 2022).

The company's international expansion strategy often involves acquiring local companies or creating strategic partnerships, which helps to overcome cultural and logistical challenges. For instance, Amazon acquired Souq, a major e-commerce platform in the Middle East, in 2017 to establish its presence in the region (Reuters, 2017).

In addition to its core e-commerce business, Amazon has been diversifying its revenue streams by developing new services. One such venture is Amazon Advertising, which is fast becoming a major player in online advertising. In 2022, Amazon Advertising revenues reached $21.5 billion, making Amazon the third-largest digital advertising platform in the U.S. after Google and Facebook, with a market share of 10.3% (eMarketer, 2022).

Another significant part of Amazon's platform strategy is its third-party seller services. As of 2022, more than half of the goods sold on Amazon worldwide came from third-party sellers (Amazon, 2022). This not only extends the range of products available on Amazon but also provides an additional revenue stream for the company through fees and commissions.

Furthermore, Amazon's pioneering role in creating and popularizing smart home devices through its Echo product line, powered by Alexa, has made it a significant player in the Internet of Things (IoT) space. In 2022, Amazon held a 53% share of the global smart speaker market (Strategy Analytics, 2022).

In summary, Amazon's extensive reach across multiple sectors of the platform economy, its vast global presence, and its continuous innovation and diversification of services all contribute to its commanding position in the platform economy. The company's ability to harness technology to serve customers effectively and efficiently has been a key driver behind its success.

5.2.2 Amazon's Pricing Strategy and Predatory Practices

A central part of Amazon's competitive strategy is its aggressive pricing, which has been instrumental in attracting customers and gaining market share. While offering low prices is a common strategy in retail, Amazon has been known to employ some pricing strategies that have raised concerns about potentially predatory practices.

1. Loss-Leading Pricing

A common pricing strategy employed by Amazon is loss-leading pricing. A loss leader is a product sold at a low price, below its market cost, to stimulate other sales of more profitable goods (Samuelson & Marks, 2006). Essentially, a "loss-leader" is not only sold at a price below its cost but even at a price that might incur a loss.

This strategy aims to "lead" customers into buying other, hopefully more profitable, products, thus compensating for the initial loss (Samuelson & Marks, 2006). This strategy is common across various industries, ranging from supermarkets (where certain items might be sold at a loss to attract customers) to consumer electronics and online services.

An illustrative example of this strategy is how Costco charges 4.99 USD for a rotisserie chicken and hasn't increased the prices since 2009 (Business Insider, 2018). However, while a loss-leading pricing strategy can be a legitimate business practice, it may raise antitrust concerns if it's used by a company with substantial market power to drive competitors out of the market.

Amazon has been known to price some products at a loss in order to attract customers and encourage them to make additional purchases. This strategy is particularly prevalent in Amazon's book sales, where it has often sold books at prices lower than its cost.

The rationale behind this strategy is to attract customers to Amazon's platform, betting that once they are there, they will buy other goods as well. This strategy can be very effective, especially given Amazon's wide range of product offerings. However, this approach raises concerns about predatory pricing – a practice where a company prices its goods at a very low level to drive competitors out of the market.

2. Below-Cost Pricing

Below-cost pricing is another strategy that Amazon has been accused of employing. It is a strategy where a company sets the price of a product below its production cost. This strategy is often used to gain market share, drive out competition, and establish a monopoly position. The below-cost pricing strategy is often seen in Amazon's e-book business. For instance, Amazon has been known to sell best-selling e-books for $9.99, a price point that is likely below the wholesale cost (Khan, 2017).

These pricing strategies, while beneficial for consumers in the short-term due to lower prices, can have detrimental effects in the long term. If these strategies result in Amazon gaining monopoly power in certain markets, it could lead to higher prices in the future once competition is eliminated. Furthermore, it could stifle innovation and diversity in the market if small businesses cannot compete with Amazon's low prices (Ezrachi & Stucke, 2016).

While these strategies have contributed to Amazon's dominance, they have also sparked considerable controversy and led to calls for stricter antitrust regulation to prevent potential market abuse.

5.2.3 The Pricing Duel: Amazon vs The Big Five publishers

In the section that follows, I describe a case illustrating Amazon's conduct and how the firm has established structural dominance. This particular case provides an outlook of Amazon's handling of e-books business and its confrontation with independent book publishers, focusing on predatory pricing practices.

Initially operating out of his garage in Bellevue, Washington, Bezos aimed to create the world's largest bookstore, named Amazon after the world's largest river. By July 1995, Amazon opened as an online bookseller, offering the largest collection of books accessible to anyone with internet access. The company sold books to all 50 states and over 45 countries within its first two months, with sales reaching $20,000 per week. Amazon announced itself to the public in October 1995 and issued its initial public offering of capital stock on May 15, 1997 (Wikipedia).

At the time of Amazon's emergence, the bookselling industry was undergoing significant changes. In the 1990s, the major players in the bookstore chain landscape were Barnes & Noble and Waldenbooks, along with a number of regional chains. Barnes & Noble was the country's largest bookstore chain, while Waldenbooks followed closely. However, the advent of internet retailing like Amazon dramatically changed the bookselling world. While these traditional chains were struggling with store closings, Amazon brought in a new era of book distribution with its affiliate programs and online sales model, disrupting the status quo and dominating book sales.

The enterprise emerged as a beneficial alternative to the traditional bookstore chains that had begun to monopolize the book retail industry. In the twilight of the 1990s, these sizable chains, led by Borders and Barnes & Noble, dominated approximately a quarter of the adult book market (Gessen, 2014).

Amazon expanded rapidly and within ten years, it had emerged as an alarming threat to the chains. As Amazon's revenues grew by selling books, it funelled more revenue

back to the book publishers. However, the first signs of threat didn't reveal itself until the launch of the Kindle by Amazon. While presenting the new product, Bezos announced that new releases and New York Times Best Sellers would be priced at $9.99 (Amazon, 2007), which is believed to have surprised the publishers. Bezos's plan was to dominate the e-book industry, in the similar fashion how Apple carved the digital music industry, with its iTunes (Packer, 2014). The company's strategy seemed to work, and according to some market statistics, it was dominating the e-book retail market, with 90% market share (BusinessInsider, 2010).

According to the Vanity Fair article from 2014, which describes the events which took place after the announcement of Kindle, publishers were surprised to see their newly updated contracts with Amazon, which de-facto indicated that they had no control over the e-book sale prices. One of the main issues was the fact that publishers were interested in selling e-books, but at a different price range and when people were most likely to buy them - when a book was new. Furthermore, publishers were stressed about the fact that Amazon's $9.99 price policy for e-books, would eventually drive consumers away from traditional hard books, as they couldn't compete with potential economies of scale achieved with e-books, as there were no publishing or logistic costs associated. At the same time, they wanted to have some degree of control over the pricing of the books.

Later on, in 2010 an opportunity presented itself, to change the status quo, as Apple announced its plans to introduce iPad, which included access to iBook Store. This time, publishers chose a different approach, and instead of letting Apple set up prices, they would set their own prices, and agreed to provide a 30 percent sales commission to Apple (otherwise known as Agency deal). Accordingly, five of what then was known as Big Six publishers (Penguin, HarperCollins, Simon & Schuster, Macmillan, Hachette, but not Random House) signed respective agreements with Apple, for the iBook Store and ended up setting prices usually from $12.99 to $14.99.

After successfully implementing the deal with Apple, the same publishers tried to convince Amazon to switch to the same approach as well and the rest is history. Firstly, Amazon rejected Macmillan's proposal, which was either Amazon accepts the new commission based deal, or new e-book releases on Kindle would be available after seven months of print publication. In response, Amazon removed the "buy" button on Macmillan's offerings from its online store, however, quickly after that capitulated and accepted the deal, stating that: "*Macmillan has a monopoly over their own titles…*" (Amazon, 2010). Similarly, other publishers followed the same path and reached similar agreements with Amazon.

Later on, in 2012 the United States Department of Justice (DOJ) accused Apple and five of the Big Six publishers of colluding in order to raise prices (WSJ, 2012). Some raised concerns that the DOJ was going after the wrong player, stating that it was Amazon's predatory tactics which drove book publishers and Apple to join forces. In response, the DOJ investigated Amazon's pricing strategies and found not enough evidence to back the theory that Amazon was in fact practising predatory pricing practices (Khan, 2017).

Eventually, all the parties of the case settled, in which the judge required Apple to pay over 400 million USD to as many 23 million e-book consumers (New York Times, 2014).

5.2.4 Conclusion of the Duel

The duel between Amazon and the Big Five publishers showcased the challenges raised with the digital platforms, underlining the Monopoly power gained by Amazon in the evolving e-book industry. Furthermore, the incident revealed Amazon's potentially disruptive approach and its hunger for market dominance. This duel, and the DOJ involvement, with consequent settlements, manifested an important turning point in the e-book industry. It has since set the stage for the new strategies in the industry, such as Netflix-like subscription models and entry of the new players.

However, Amazon's business strategy in pricing the e-books, while obviously beneficial for the book readers, was clearly designed to capture the market at monopolistic levels. By taking advantage of its enormous infrastructure and predatory pricing tools, Amazon cemented its dominance and by some estimates controls 67% of the e-book market in 2023 (some even state that at its peak this number reached around 90% before Apple's entrance to the market)

Furthermore, Khan (2017) underlines the potential shift in publishing due to the influence exerted by Amazon on them. As fees and control over pricing by Amazon becomes higher, publishers who rely on a cross-subsidization model (a practice of financing one product with the profits generated by a different product, hence funding more risky book projects with profits generated through best seller books), might be less prompt to invest in potentially risky and diverse books.

Secondly, on top of economical risks, there are potentially political risks too. In theory, with its enormous control and platform power Amazon just could decide which books are "allowed" to be sold in its platform based on its own leanings. While some might argue that Amazon has the total right to decide which products to sell on its platform, others believe provided the market dominance it has, Amazon has a social responsibility to ensure the different standpoints and resist censorship.

Last but not least, the duel between Amazon and the publishing companies provides an interesting lesson. In the era of digital platforms, all members of it, starting from ordinary users to sellers and even regulators, must adapt to its evolving pace accordingly, otherwise they risk being overshadowed by these technological giants.

5.2.5 The Dual Role Issue of Amazon: Platform and Seller

Amazon's transformative journey that redefined the e-commerce market is truly astonishing. Since its foundation, Amazon expanded into a behemoth, entering various

sectors and industries. From just selling books, into a technological company with business in cloud computing (AWS) and entertainment with its Amazon Prime.

However, probably its most significant evolution has been its dual role, when it acts as a platform for the third-party sellers and being a direct seller of its products itself.

In this chapter, we try to analyse its dual role, underlining the impact on competition and digital platform economy. We will briefly discuss the topics of potential conflict of interest arising from its dual role as Amazon gains competitive advantage over third-party sellers, in fact using the data accrued through them.

5.2.6 Overview

Being launched in November 2000, Amazon's Marketplace played an important role in the company's rise to success. The platform has allowed third-party sellers to have a podium for them to showcase their products to the global consumers (Stone, 2013). In 2022, the platform had over 2.5 million active sellers which accounted for more than 60% of sales on Amazon (Amazon Stats, 2022).

At the same time, while Amazon serves as a platform marketplace, it also directly competes with other sellers, offering its own branded products. First it entered this arena in 2009, offering simple commodities such as batteries and HDMI cables under brands like AmazonBasics, with prices approximately 30% lower, compared to the ones of Duracell and others. The outcome of this was incredible and according to some estimates squeezed nearly a third of the online market for batteries (New York Times, 2018).

While this practice is clearly lucrative for Amazon, it raises important questions. Is the playing field on the same level for all selling participants and Amazon? And if not, does the company's dual role stifle innovation and competition? And if yes, isn't it just the right time for regulators to have a closer look on Amazon's business practises?

5.2.7 Potential Conflict of Interest

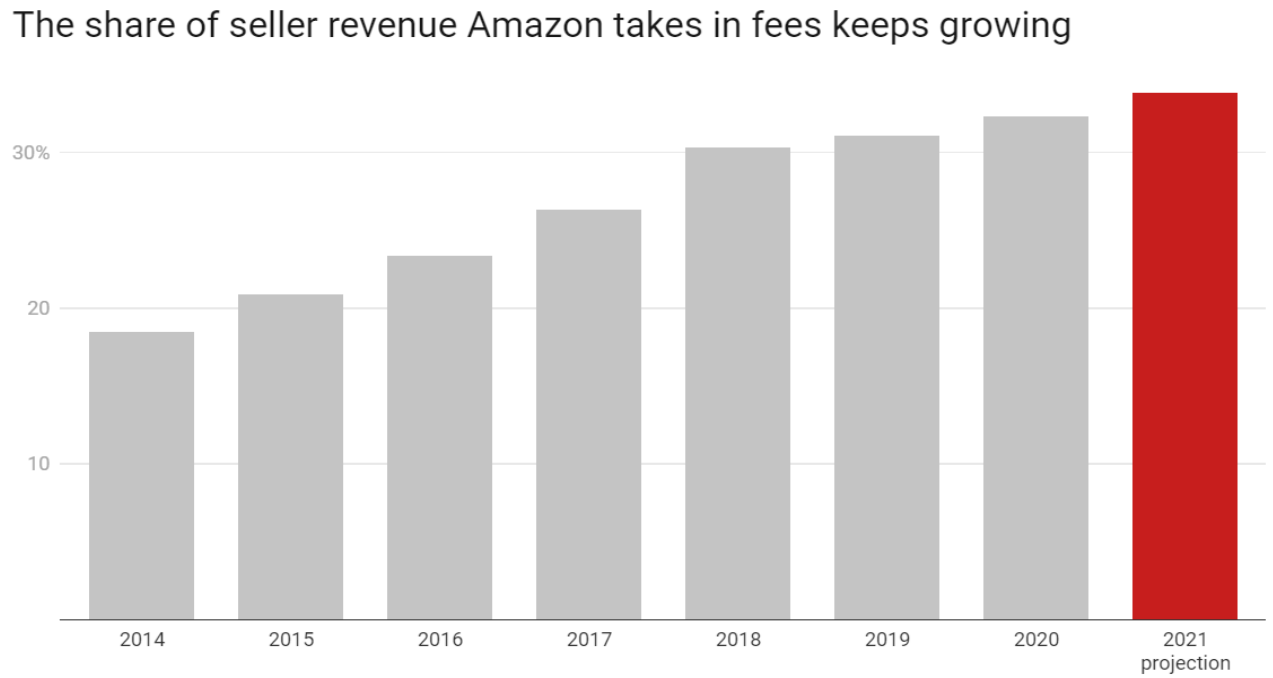
The era where we are living right now is highly characterised by the essence of data. And with every click, search and purchase performed by the users, Amazon acquires vast amounts of data via its platform and consequently takes advantage of it. Having 360 degrees information about each user and seller, Amazon can analyse how specific sectors in its platform are performing and their potential.

Lina Khan, in her paper "Amazon's Antitrust Paradox" discusses how the data captured by Amazon could be used to its own potential. In case a third-party seller is experiencing a sufficient increase in its product sales, Amazon, having all the necessary data, could potentially introduce competing products under its own brand with a lower price point or even manipulate search algorithms, so that its own products are represented as a top choice. This type of business practices raise the question about the fairness of the platform, meanwhile undercutting the original seller. As a behemoth like Amazon would have all the tools necessary to understand the real time market trends and adjust its strategies accordingly, third-party sellers would have potentially no chances competing against Amazon. Furthermore, with its Amazon Prime program and its logistic infrastructure, the tech giant can incentivize consumers to switch to its own products over third-party sellers. That being said, competing with Amazon on its own platform is like playing against the inventor of a board game. Inventor knows every rule, winning strategy and every loophole available, as they wrote the rulebook.

5.2.8 Amazon's entry patterns and potential impact on products

You might think to yourself, if aforementioned is the case, why Amazon simply does not capture all the possible sales categories and monopolise everything in its entirety? Well there are several reasons behind it.

First, Amazon does not provide its platform for sellers for free. The usual trade-off is that sellers gain a potentially huge audience, and in exchange Amazon asks for a percentage over earnings. According to some reports, in 2014 the average seller fee was around 19 percent, and nearly doubled and reached 34 percent in 2021 (Vox, 2021). Furthermore, Institute for Local Self-Reliance (ILSR) estimates that Amazon gathered around 121 billion USD from seller fees alone (Mitchel, 2021)



Source: Institute for Local Self-Reliance

Second, as discussed by Zhu and Liu (2018) in their paper, Amazon might be interested in entering and subsequently competing against third-party sellers, if these situations occur:

1) If products are high cost, require lower shipping expense and has a comparatively great demand;
2) High customer ratings for the product (chances increase by 25% if those ratings exceed 4 out 5);
3) Does not require high investments or efforts to grow.

On the contrary, Amazon might be less incentivised to enter the competition, if for example, the product requires specific know-how which it lacks or if it sees value in the partnership with the third-part seller.

Another important aspect is - how the entrance of Amazon and its practices can impact the third-party sellers, once the "owner" of the house, becomes a direct competitor. According to some reports, it can potentially reduce the incentive for them to innovate. If an entity or seller believes that any successful product offering, can be potentially copycatted by Amazon, they might be less incentivized to invest and innovate (ILSR, 2021). This is a potentially risky situation which could lead to a platform that is not as dynamic and responsive to consumer needs. In the long run, this could translate to reduced choices and higher prices for consumers, as the majority of the product market will be vastly captured by a dominant player - AMAZON.
Furthermore, as consumers are found to be sensitive to delivery costs, free shipping deals offered by Amazon to its Prime users, might further drive sales from third-party sellers (Lewis, Singh and Fay, 2006). In addition, Zhu and Liu (2018) found that once Amazon enters the arena, the chances of the same product being offered by third-party sellers reduces by 6 percentage points, discouraging them from continuing to offer the products. These findings are in line with the belief that past knowledge and experiences affect strategies of the firms (Huber, 1991).

5.2.9 Conclusion: Amazon - A Double Agent?

This chapter discussed the implications of the dual role of Amazon, underlining the potential challenges it poses to the platform ecosystem.

In today's world, in which data becomes the "source of power", companies like Amazon take full advantage of it. Even though in most cases if used ethically, it can drive innovation and better consumer welfare, however, if not, can be easily used as a tool to leverage its position to outcompete smaller players - in this case third-party

sellers. As discussed earlier, this raises important questions about monopoly power, fairness and competition.

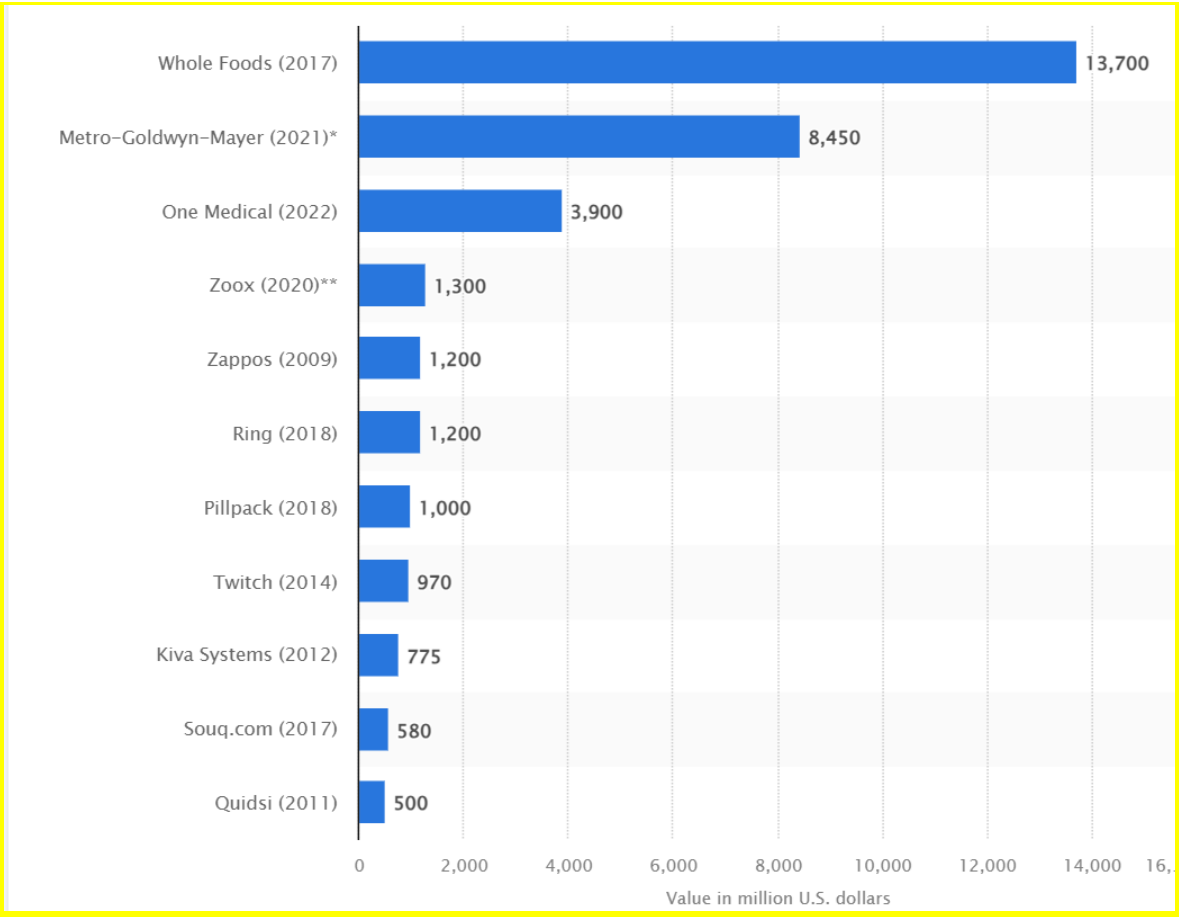
The potential corrosion of innovation in the platform, due to Amazon's practices, should be a reason for concern. If third-party sellers would in fact be disincentivized from introducing new products, due to the fear of being overthrown by Amazon, the viability of the platform could be at risk. This in turn could lead to a scenario in which consumers experience much less choices and consequently higher prices in the long run.

Amazon's role as a "double agent", playing for both sides, has played an important role in its meteoric rise. However, as mentioned before, it raises dilemmas that stakeholders must grapple with, so that protagonist of the story - Amazon, continues to innovate while considering fair play with other platform players.

5.2.10 Amazons' Mergers and Acquisitions: A Predatory Playbook?

Since the foundation, Amazon has used mergers and acquisitions (M&As) as a leveraging tool for its expansion and in some cases elimination of its competitors. Over the years, Amazon has made nearly 100 acquisitions, and as of 2023 has spent nearly 45 billion USD on these transactions (Tracxn Technologies, 2023).

Most expensive company acquisitions by Amazon as of July 2022 (in million U.S. dollars)



Source: Statista.com (2023)

As can be seen in the chart above, which shows most expensive acquisitions done by Amazon until 2022, it is clear that most of them were done in order to enter another line of business through buying out an existing player. However, one of these names stands out. Quidsi, a once fast growing e-commerce business, which owned the Amazon-like website/platform called Diapers.com, that specialised in selling baby care products. This acquisition was especially noteworthy, as it highlights Amazon's aggressive tactics to eliminate competition.

Brad Stone, in his book "The Everything Store: Jeff Bezos and the Age of Amazon," highlights the events that took place before the acquisition happened. It is reported that Amazon saw Diapers.com as its competitor, with a loyal customer base, and considered it as a potential threat. As a first attempt to dematerialize the risk, Amazon

approached Diapers.com parent company Quidsi, with an offer to acquire the company. Founders rejected the “opportunity” and according to some reports Amazon went “Thermonuclear” on them (Oremus, 2013).

As the competitor rejected the offer, Amazon went with a Plan B, and started dropping prices on its platform up to 30 percent on equivalent products offered on Diapers.com. To check the theory that Amazon is directly engaging in a price war with them and possibly selling at a loss, Quidsi started manipulating their prices, and analysed that Amazon’s website modified its prices accordingly by going even further (Del Rey, 2013). Realising that they couldn't possibly compete with Amazon on resources while continuing the price war, the company eventually agreed to engage in acquisition talks and ended up selling the business for $ 540 million.

Important lesson from this story is that this event and Amazon’s predatory practices possibly sent a message to the world and new entrants that any company which would like to potentially try to challenge it, would face the consequences. Interestingly enough, 7 years after the acquisition, Amazon shut down Diapers.com and other websites previously owned by Quidsi, stating that the business line was not profitable (Bloomberg, 2017).

This brings us to the elephant in the room - “Killer Acquisitions”. A notion in which an incumbent firm acquires a product that could potentially compete with the incumbent's own product and eventually stops development of the competing product, which in turn kills the competition and innovation (Cunningham & Ederer & Ma, 2019).

Through acquisitions of competitors like Quidsi, Amazon could potentially reach several strategic objectives simultaneously. First, it eliminates from its way any potential competitor, which in turn reduces competition in the market and increases its market share, which could give it more flexibility in pricing strategies. Second, the acquisition provides access to valuable consumer data, which could be used to

improve its services and have better targeting of customers. Last but not least, with acquisition it also captures established customer loyalty and brands, which could be integrated into Amazon's ecosystem.

5.3 Conclusion of the Amazon Case

Amazon is a unique company, which transformed itself during digital transformation, from an online bookstore into a tech giant, which dominates multiple sectors of the platform economy. Its rise to the top of e-commerce, through its customer-centric approach and aggressive pricing business strategies, however raises important questions regarding its impact on market competition and consumer choice.

The company's aggressive pricing strategies, such as loss-leading and below-cost pricing have played a crucial role in gaining a huge customer base. On the other side, these instruments raise concern about predatory pricing and consequently potentially killing any possible competition.

The story of Amazon vs The Big Five publishers showcases the company's ability and willingness to leverage its market power to dictate the terms, which in the long run might not be the best outcome for other stakeholders in the industry.

Second, the dual role it plays, as a platform mediator for third-party sellers and a direct competitor itself, further underlines the complexity of the situation, raising important questions regarding the competitive landscape. Even though this dual role has been very successful for Amazon, the usage of data on its own advantage has led to potential conflict of interest, as it outpaces its smaller competitors on its own platform. This type of business practises, open the door for the discussions regarding the fairness of the platform and potential regulatory solutions to the problem.

Third, Amazon's approach to particular mergers and acquisitions, as discussed earlier - Quidsi, further shows its aggressive and potentially predatory tactics to eliminate any

potential competitors. Through these types of acquisitions, Amazon potentially could conserve market power, while creating a risk to the emergence of a diverse and innovative market. The notion of “Killer Acquisitions” seems to be particularly relevant to describe the company’s tactics, as it doesn’t simply eliminate the competition, but also spreads the word that any potential entrance to its market area would be met with aggressive response.

In conclusion, Amazon’s astonishing rise and its dominant market position in the platform economy, brings with itself concerns regarding innovation, market efficiency and potential anti-competitive behaviour. Challenges posed by digital platforms as Amazon should be carefully studied by regulators and policymakers ,in order to address those challenges. To name a few of them: How can we ensure to encourage innovation, while market conditions for competitions are preserved? What should be the main goal of new regulations in creating a balance between the interest of dominant platforms like Amazon against those of smaller players and consumers in the long run?

Finally, as the digital landscape continues to evolve, these questions will become more and more important in shaping the next phases of the platform economy and ensuring that it serves for the benefit of broader stakeholders in the market and society.

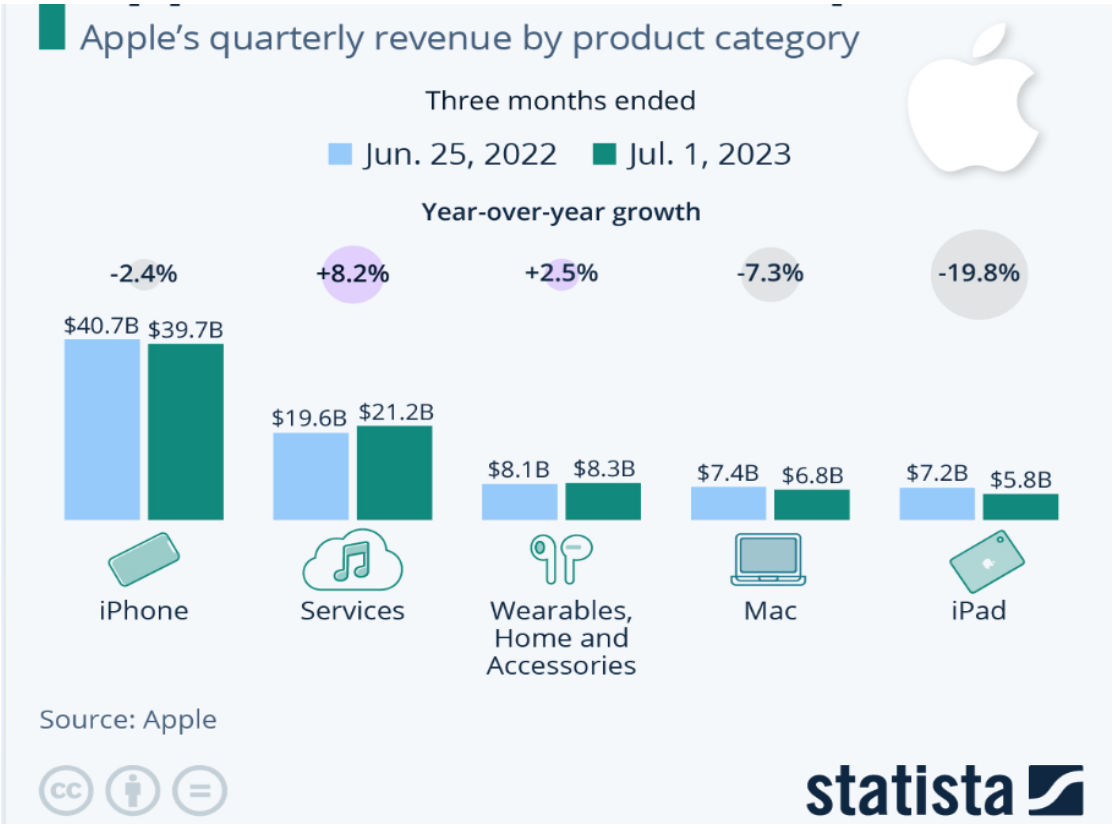
Chapter 6

Case Study: Apple Inc.

6.1 Introduction

Throughout corporate history, only few companies have had such an enormous level of market influence, consumer loyalty and cultural impact as Apple Inc. Founded as a player in personal computing, back in 1976, it evolved into a giant with product offerings of iPhones, iPads, Macbooks and these products have redefined their respective market categories, becoming an industry standard. However, probably the most important aspect the company has achieved is its so-called “ecosystem”, which allows users to use its products in an interconnected way, which transformed how we interact with technology.

Introduction of the iPhone played an important role in cementing Apple’s vision in its closed ecosystem with quarterly sales of 40 billion USD as of 2023 July.



6.2 The App Store: A Digital Platform

Central to the ecosystem and iPhone's success is the App Store by Apple. It is a digital marketplace which serves as the exclusive channel for distributing apps on iOS (Apple's proprietary operating system).

App Store was launched in July 2008 and became the first of its kind and allowed users to access and download applications directly onto their mobile phones. Similarly as it did with music, Apple reserved the rights to set a 30 percent fee on developer's app sales. The results were great for Apple and in 2020, the number of apps available in the App Store, reached more than 2 million, while yearly revenue from App Store alone is estimated to be staggering 86 billion USD (Curry, 2023).

The App Store has altered how users use the devices, as now with apps downloaded through it, we can use apps to listen to music, watch movies and even travel. However, the App Store's very centrality to the digital economy and enormous control Apple has over it, has raised significant antitrust concerns, which are the focus of this case study.

6.2.1 Market Power

Market power is an important concept in the study of economics and competition policy, underlining the ability of a firm/entity to unilaterally influence the market conditions (Investopedia). A near perfect example of such a concept is Apple Inc., as in the last years the company has been increasing its prices for iPhone, as can be seen on the chart below, without facing impactful sales declines.

Source: Financial Times, 2022

You might think to yourself, how does the sales of devices like the iPhone have anything to do with the study of the App Store? In the current, fast evolving age of platform economy, where network effects and data-driven advantages give companies an edge through the ability to leverage dominance across multiple markets, Apple's App Store serves as an interesting case study to further explore these market dynamics. This section aims to discuss various aspects of Apple's market power, specifically focusing on the company's control over its app distribution platform, which has become an important part of its ecosystem.

Furthermore, the App Store serves as a sole bridge where users can download the apps they need. Considering that Apple holds approximately 57 percent of the market share for the mobile operating system in the United States (Statcounter, 2023), this dominant position allows Apple to have a significant control over the distribution and monetization of apps.

Most importantly, market power is further showcased by the company's ability to impose the so-called "distribution tax" - 30 percent commission fee for in-app purchases. This practice is widely criticised by app developers, stating that it has become as damaging as oil and railroad tycoons in the 19th century (Variety, 2021).

Additionally, the imposed fee structure leads to higher app prices and reduced innovation, as it becomes hard for developers to compete (Eisenman, Parker and Van Alstyne, 2006) against in-house developed apps by Apple such as Apple Music, Maps, Podcasts and etc.

On top of it, Apple's ecosystem creates strong lock-in effects, making it harder for users of iOS to switch to other alternative platforms, such as Android by Google. Researchers analysing the South Korean market (Park and Koo, 2016) found that the cost of switching operating systems is around 250 USD, solely from application purchasing cost and not including the additional costs due to the incompatibility of platform-specific devices.

To conclude, Apple's market power is not just the result of its enormous user base, but also due to its strategic decisions that could potentially limit competition in its platform. For example, the company is reported to exclude, limit or copy the functionalities of competing apps, further intensifying its dominant positions without any repercussions (Washington Post, 2019).

6.2.2 Direct evidence of Market Power

The company's ability to "tax" third-party app developers could serve as direct evidence of Apple's market power. In fact, the existence of this high level of commission has not led to any reported significant loss of developers or consumers, shows that Apple has the power to set the terms that favours itself first. Furthermore, the company was able to increase the iPhone prices in the last years, without losing sales, which again demonstrates the inelastic demand for its products.

Additional indicators of Apple's Market Power include:

- Revenue Share: According to some reports (Washington Post, 2019), Apple has a significant portion of the U.S. mobile app market revenue, which suggests to

be around 71%. This simply means that iOS users spend on average more on purchasing apps, compared to any other competing platforms (such as Android). To put it simply, to avoid iOS by Apple, would be a huge miss and a mistake for any app developers, in turn giving a huge upper hand and leverage for Apple when dealing with third-party app developers;

- Lock-in Effects: Apple ecosystem, which includes products like iPhone, iPad, Macbook, AirPods and others, create a strong lock-in effect, in turn making it hard for users to switch to other alternative available platforms. Evidently, this lock-in effect further enhances Apple's market power, by ensuring that it has a strong consumer base, which is less likely to abandon its platform.

On the other hand, even though in terms of global market share, Android captures more than 70 percent of users (Statcounter, 2023), these two players are not direct competitors, if looked in prism of respective app stores, and have chosen to compete on different dimensions. Worth mentioning is the fact that unlike Android, iOS does not allow third-party app stores in its operating system, nor does it permit developers to use their own in-app purchase systems. This in fact amplifies Apple's control by limiting available options to both developers and consumers.

6.2.3 Summary and Implications

The company's control over the App Store, with its ability to set the rules and terms of the distribution agreements unilaterally, gives Apples significant market power. Implications of this not simply affects app developers and users, but also the broader app economy too. The monopolistic behaviours of the company can stifle innovation and limit consumer choice and in some cases damage the competition in the industry. In the next sections, we will further discuss the business practices employed by Apple, underlining how it could impact the market dynamics.

6.3 Anti Competitive Practises: A Deep Dive

Apple has been at the centre of attention and scrutiny over its App Store in several jurisdictions (US, EU, South Korea and UK) for its unfair business practices (Evans, 2022). The following section aims to provide an overview analysis of these practices, underlining the impact of it on app developers, consumers and the competitive landscape of digital platforms.

6.3.1 The 30 percent Commision Fee: "Platform Tax"?

One of the most frequently discussed topics regarding Apple's App Store is related to the 30 percent commission fee that the company charges on in-app purchases (IAP). This fee, often referred to as the "Apple Tax" or "Platform Tax", has been subject to criticism, for multiple reasons. First, it creates additional financial costs for app developers, specifically on those whose business model relies on subscription-based revenue streams. This in turn, could force companies to increase their prices accordingly, and transfer this cost to end users. Second, the 30 percent fee has led some of the biggest digital players to abandon the IAP system altogether. Spotify and Netflix, for example, decided to take out the in-app subscriptions option, so that users could subscribe via alternative methods instead, such as their respective websites (Spotify, 2016; The Verge, 2021). This in turn not only cuts " the pie" for potential revenue from Apple, but also creates a fragmented and less user-friendly experience for consumers who are already locked into the iOS ecosystem (Khan, 2019).

Before moving to the next section, which describes the clashes which took place between Apple, Spotify and Epic Games, we briefly discuss the rules and guidelines that govern the App Store. Specifically, we will discuss Apple's guidelines regarding the 30 percent fee on in-app purchases and how it is applied across different apps and services.

6.3.2 App Store Guidelines on In-App Purchases

Apple's App Store guidelines are important in understanding how the in-app transaction fees work and what are the rules that shape the ecosystem of apps in iOS. According to these guidelines, app developers are required to use Apple's in-app purchase system (IAP) for any digital goods or services sold within the app (Apple Developer Program License Agreement). For example, companies like Uber or other delivery platforms, are not required to use the IAP system, as they are considered to be providing physical goods and services. This system, applied by Apple, allows it to take reportedly a 30 percent cut of any transaction made within the app (US Congressional Report on Competition in Digital Markets, 2022). Furthermore, guidelines strictly forbid developers from directing users outside of the apps to avoid paying this fee to Apple.

On top of that, Apple has been heavily criticised for applying double standards for different players within the app-store. For example, as mentioned earlier, apps like Uber or Airbnb, reportedly do not pay 30 percent transaction fee, which raises concerns whether Apple uses this tactic in order to put itself in advantage in markets where it also competes itself (i.e. Spotify vs Apple Music in audio streaming; Netflix vs Apple TV in content streaming; Epic Games vs Arcade in mobile gaming).

Furthermore, the guidelines also restrict app developers to communicate with users alternative payment methods, other than Apple's IAP. This in turn, raises antitrust concerns, as it limits the ability of developers to offer potentially cheaper alternatives, therefore locking them in Apple's ecosystem (US Congressional Report on Competition in Digital Markets, 2022).

However, it is important to understand these Apple's App Store guidelines to further discuss the disputes that have arisen between Apple and several players in the market, such as Spotify and Epic Games.

6.4 “Epic Battle”: Apple vs Spotify

The controversy surrounding the disputes between Apple and entities such as Spotify have showcased the underlying issues related to Apple’s App Store guidelines and policies. These clashes serve as case studies that raise the discussions around the possible impacts of Apple’s 30 percent commission fee on consumer choice, competition and innovation in the long run.

6.4.1 The Spotify Saga: “Time to Play Fair”

Spotify - one of the biggest audio streaming services, with over 551 million monthly active users (including 220 million monthly subscribers) as of June 2023, was founded in 2006 by Daniel Ek and Martin Lorentzon in Sweden (Wikipedia).

In 2019, the company filed an antitrust complaint against Apple in the EU, asking the European commission to: “level the playing field” (Daniel Ek, 2019). The central issue was 30 percent commission fee for in-app purchases (in Spotify’s case - monthly subscriptions), which the company argued was putting Spotify in unfair disadvantage and Apple’s own competing product Apple Music an upper hand. On top of essentially paying a fee to its direct competitor, Spotify claimed that Apple used various tactics to undermine its growth. The tactics used by Apple included blocking app updates, restricting a direct communication between Spotify and its users, not allowing specific marketing campaigns and limiting the apps functionalities on Apple devices (Spotify, 2019).

In 2020, the European Commision has opened a formal investigation, focusing on the mandatory use of the IAP system and the impact of these practices on competition in the music streaming market (European Commision, 2020). The case could have a significant impact for the future of the digital platforms and potentially could set a precedent on how Big Tech companies are regulated in the EU.

6.4.2 Conclusion of the Saga

The case of Apple vs Spotify underlines the tension between Apple's massive control over its ecosystem and necessity for competitive and innovative digital platforms. It raises several questions regarding the role of regulators and policies which could ensure a fair competition. More importantly, understanding whether Apple's policies are in fact reducing competition in the overall market is crucial. Cases like this may potentially serve as an echo that could bring change and reshape the digital landscape in the long run.

6.5 Exclusion and Self-Preferencing

Apple's control over its App Store is not only limited with commissions and IAP, but also includes having an ability to allow or exclude apps from its platform. A good example of this tactic is the restriction or in some cases even the removal of screen-time apps, after Apple launched its own similar screen-tracking feature, embedded in the company's devices. According to the Times magazine: "Apple has removed or restricted at least 11 of the 17 most downloaded screen-time and parental-control apps", even though it had some drawbacks in comparison to some of the third-party alternatives. While Apple justified it by drawing attention to privacy and safety concerns (Apple Statement, 2019), the manner and timing of these actions raise some concerns.

Another important area of concern for Apple's conduct within the App Store, is self-prefencing of its own products and services, which involves giving an advantage to the company's own apps over competitors, by de facto using its control over the platform. For instance, apps such as Apple Music, Apple TV+ and others more are exempted from the 30% commission fee that other players like Spotify and Netflix would have been subject to, if they decided to use IAP. In turn, this makes the playing field uneven and puts the competitors at a disadvantage.

Furthermore, reportedly Apple has been consistently caught manipulating the App Store search algorithms to promote its own apps and in some cases would display as 14 Apple owned apps before showing any results of competing products . However, in the face of rising antitrust investigations across the world, the company adjusted its algorithms so that fewer in-house apps would appear (TechCrunch, 2019). The sole ability of manipulating the platform, potentially undermines the integrity of Apple and respectively App Store, while distorting consumer choice and in turn - innovation.

6.6 Conclusion: The Broader Implications of the Apple Inc. Case Study

The App Store serves as an important platform for app developers hoping to reach the global consumer market. However, Apple's monopolistic control over its ecosystem and app distribution model with its 30 percent commission fee raises crucial antitrust concerns, which has been highlighted through the company's conflict with companies like Spotify. The case study highlighted challenges related to competition, fairness and consumer choice in the digital platform like App Store.

6.7 Future Outlook and Regulatory Landscape

In the era of constant change, the regulatory landscape concerning digital platforms such as Apple's App Store will most likely change too. As mentioned in the discussion of Spotify, the European Commission has already initiated antitrust investigations, similarly according to the Wall Street Journal the Department of Justice in the United States, has been accelerating the antitrust case against Apple. The results of these cases (and possibly more to follow) could set crucial precedents in the topics of digital platforms governance and potentially leading to a wave of changes across Big Tech companies on how they model their business.

The results of these cases are uncertain, however it is evident that issues concerning Apple's App Store policies have an impact not only on entities such as app developers, but also the whole digital platform economy. That being said, this should

and probably will draw close attention from regulators, politicians and the general public.

Chapter 7
Discussion and Implications

The platform economy has emerged as a transformative force in the global marketplace, reshaping industries and redefining the rules of competition. Against this backdrop, tech giants have risen to unprecedented levels of influence and market power. Previous chapters have provided in-depth analysis of these companies through case studies, examining their business models, competitive strategies and their legal challenges posed by them.

These case studies are representative of focus and powerful dynamics that expand on the use of power in the digital age. However, understanding the issues surrounding these entities is just the tip of the iceberg. The real challenge would be to tackle the (negative) impact these firms exert on the broader economy. Bringing together key findings from the Amazon and Apple case studies, we will provide a comprehensive overview of the challenges and opportunities ahead in regulating Big Tech.

We will discuss the policy implications of these findings, while examining the possible challenges in regulating Big Tech, and explore the ripple effects of their actions on consumers, competitors. In doing so, this chapter seeks to contribute to the broader discourse of regulation in the digital age and provide insights, and pave the way for future research in this important area.

7.1 Synthesis of Case Studies

The case studies of Amazon and Apple are important lenses through which we can more closely examine the broader landscape of Big Tech, and provide valuable insights into the challenges these giants pose to markets, regulators and society.

Both companies have established dominant positions in their respective markets, but their strategies and challenges are unique, yet surprisingly similar in many ways.

Amazon, the e-commerce giant, has fundamentally changed the way we shop and interact with online marketplaces. Its business model, which is built on a large number of suppliers and enormous logistic networks, has set a new standard for customer service. The company's Prime membership, which offers fast shipping and many other benefits, has created millions of loyal customers. However, this benefit comes with a cost. Amazon's aggressive pricing strategies and data-driven insights into consumer behavior have raised serious concerns about market competition. In a land dominated by Amazon's performance and scale, smaller players in the arena are finding it increasingly difficult to compete. Additionally, Amazon Web Services (AWS) is expanding its influence in many areas, and the company is not only a retail giant but also an important player in cloud computing, data storage, and even artificial intelligence.

Apple, a pioneer in consumer electronics, has created an ecosystem that has been praised and criticized at the same time. Its vertically integrated model, including hardware, software and services, has created a loved by millions ecosystem that distinguishes itself with a simple user experience, but on the other hand limiting them of choices.

The cornerstone of this ecosystem, the App Store, has been controversial for many observers. Apple's 30% commission on in-app purchases and its strict policies to stifle competition and innovation have been called into question. Companies like Spotify and Epic Games have been outspoken against these policies, leading to ongoing legal battles and discussions about the need for a fair regulation.

Both Amazon and Apple exemplify the antithesis of Big Tech: companies that offer unprecedented innovation and convenience, and pose serious challenges to market competition, consumer choice, and democratic institutions. Their impact extends beyond their immediate customer-facing operations, encompassing the labor market, data privacy and the wider digital economy. Together, these case studies provide nuanced understanding of the multifaceted challenges posed by Big Tech. They

emphasize the urgent need for comprehensive policies that can address market distortions and the social consequences of the enormous impact on these sectors.

This analysis sets the stage for subsequent discussions of policy implications, legal challenges, and broader impacts on stakeholders, contributing to a better understanding of the Big Tech phenomenon.

7.2 The Need for Regulatory Adaptation

While modern technology and the digital economy has grown rapidly, existing regulatory frameworks haven't always kept the same pace, creating a vital need for adaptation (Stucke & Grunes, 2016). Traditional antitrust laws and consumer protection regulations were designed and intended for a totally different era and often fail to address the unique challenges posed by Big Tech companies (Khan, 2017). These entities possess enormous market power, not just in their primary sectors, but also in several others, making it even harder to regulate them under existing laws.

First, the data-centric approach of these companies further complicates the issue, as data becomes more and more important in any decisions taken. That being said, these entities have unparalleled access to consumer and in some cases competitors' data, using it as a valuable asset and powerful tool in order to reinforce their market dominance, making it crucial for regulatory bodies to consider data management and consumer privacy issues in adaptation of future strategies.

Second, the network effect and economies of scale (as discussed in previous chapters) exercised by these entities, intensifies the challenges of market competition. As a platform gains the critical mass of users, and consecutively increases its value, they make it harder for new entrants to disrupt the sectors they are in. This phenomenon often advances market concentration and could potentially reduce consumer choice in the long term. This in turn requires a nuanced approach for regulation that could balance the market competition and innovation.

Third, the aggressive Mergers and Acquisition strategies employed by Big Tech entities, further underlines the necessity for regulatory adaptation. As was discussed in the case studies, these companies have been known for the acquisitions of their smaller potential competitors, in most cases at their initial growth stage, in order to eliminate any possible threat to their market dominance. It is especially important to investigate more deeply possible occurrences of "Killer Acquisitions" which could not only reduce innovation, but also enhance Big Tech's ability to consolidate market power. Furthermore, Mergers and Acquisitions showcases another reason for regulatory agencies to adapt and evolve as a response to the new challenges posed by Big Tech.

Fourth, the issue of fairness and competition is further magnified by the self-preferencing and anti-competitive practices used by Big Tech entities. As discussed in the case studies, these entities use tools to disadvantage their competitors, in order to favour their own products and services. In addition, tactics like predatory pricing and imposing high platform tax, further solidifies their own products' market position.

Fifth, the global presence of Big Tech companies creates a unique challenge for regulators worldwide. As these entities operate across borders, it becomes difficult for any country or jurisdiction to effectively regulate them. Furthermore, the fact that the products and services offered by these companies are to some extent loved by consumers, could put an extra pressure on policymakers, consequently giving Big Tech an upper hand. On the other hand, even if one of the major jurisdictions decide to create regulatory frameworks, these companies could take advantage of these situations, if other governments are lacking behind. Therefore, there is a need for international cooperation in order to address the challenges posed by Big Tech.

Last but not least, there is growing solidarity among policymakers, scholars and industry experts that there is a need for regulatory frameworks to be updated or reimagined in the light of the challenges posed by Big Tech (Morton et al., 2019).

Several jurisdictions are already taking steps in this direction, the notable one being the EU, with initiatives like Digital Markets Act and Digital Services Act, which is aimed at ensuring a fair digital economy (European Parliament, 2021).

In conclusion, the distinctive characteristics of Big Tech entities, underlines the need for a reevaluation and adaptation of existing regulatory approaches and frameworks. However, the solution should not be to merely apply the existing rules to the context of Big Tech, but to examine the problems and challenges more deeply, so that more effective and specific regulations could be created.

7.3 Conclusion: Insight on Big Tech

The challenges posed by Big Tech companies are as we discussed complex, which requires a nuanced and adaptive approach to regulation. The case studies analysed in the previous chapter have underlined the extent of these challenges. Beginning with issues related to market competition and how these companies employ various business strategies to establish and maintain market dominance. These entities, which could be seen as representative of the broader Big Tech, have created ecosystems and in some cases new markets, that are both innovative and disruptive. This in turn raises an important need for discussions about the suitability of existing regulatory frameworks.

While the existing regulatory frameworks might have its limitations, there is rising consensus among policymakers and the broader public that new or updated regulations are essential, as evidenced by emerging regulatory initiatives in the EU and US.

On the other hand, designing the right and effective regulation most probably will have its challenges too. Policymakers would need to find a balance between innovation and market competition, while considering national and global implications of those regulations. Therefore, any potential solution should take into

consideration the interest of the public in the long term, in coordination with multiple stakeholders.

As we move to the last chapter, we will discuss further these regulatory challenges and recommended future actions.

Chapter 8
Regulatory Frameworks and Recommendations

8.1 Introduction

The dominance of the Big Tech companies has raised voices regarding revaluation of existing regulatory frameworks, as well as proposals of new ones, to better address the realities created by these giants. Many scholars and politicians have called for taming the large tech platforms. Some propose extreme solutions as breaking them up into several entities, as was done previously with Standard Oil and AT&T, while others propose lighter solutions as having much efficient antitrust enforcement. This chapter investigates the merits of various arguments, by reviewing the existing regulatory frameworks and analysing the complexities involved in governing the Big Tech.

8.2 Existing Regulatory Frameworks

The rise of digital platforms poses distinctive challenges for antitrust enforcement, therefore creating a need for a closer examination of the existing regulatory frameworks. This section aims to provide an overview of the core principles of antitrust laws in the United States. However, the focus will be within the platform economy and the Big Tech, rather than a comprehensive legal analysis.

8.2.1 U.S Antitrust Laws: An Overview

The United States antitrust law is a collection of federal laws that aim to regulate the conduct of private businesses, with a goal to promote competition and prevent unjustified monopolies which could negatively impact competitive landscape and the society. The core idea intends to prohibit a type of conduct by firms that reduces economic welfare. There are two fundamental components of any antitrust violation. First being a bad conduct by a firm, referred to as “anticompetitive conduct”, and the second is the harmful outcome to economic welfare from the creation of increased

market power than would otherwise exist (Morton et al., 2019). However, important is the fact that a firm does not violate the antitrust laws, if the market power was gained through merit, rather than anticompetitive conduct. For instance, if an entity enters the market with a product, which is superior to the alternatives in the market, and therefore ends up with 80% market share, without any anticompetitive conduct, this is not considered as a violation of antitrust laws. Therefore, this is directly opposite to the popular misconception around Big Tech, stating that enormous market share alone is grounds for antitrust enforcement. The logic behind this is the fact that US antitrust law considers that firms who do not engage in anticompetitive conduct, should be able to enjoy the fruits of their work, even if they were able to achieve enormous success and become a dominant player in their respective markets. If not done so, most probably, most firms would have been "looking over their shoulders", as being too successful could have cost them antitrust scrutiny from authorities.

Furthermore, it is important to clarify what type of conduct can be considered as anticompetitive. There are (1) mergers that are aimed at reducing competition, (2) conduct that excludes or weakens potential or actual rivals, and (3) conduct that facilitates collusion (for example, cartels) among competing firms, which would otherwise compete more eagerly. Generally, the Federal Trade Commision (FTC) considers the first two types of conduct as Single Firm Conduct, while the last one as Horizontal Conduct (FTC Guidelines).

Example of anticompetitive conduct could be mergers between competitors, in which the new entity does not create additional efficiencies, and the sole reason behind the merger is to harm competition. On the other hand, when conduct generates efficiencies and diminishes competitors' efficacy, the issue of anti-competitivity is not definitive. However, if all those efficiencies could have been achieved without directly harming the competition, conduct is more likely to be considered as anticompetitive (Morton et al., 2019).

Therefore, possible antitrust issues involving digital platforms in most cases could arise from the first two types of conduct characterised by FTC. However, in the digital age, tech giants take advantage by engaging in various complex business practices (as discussed in earlier chapters) that traditional antitrust laws struggle to enforce effectively.

8.2.2 Under Enforcement and Its Consequences

Evidence suggests that since the 1970s, courts and authorities have taken a more moderate approach towards businesses in what is considered as anticompetitive conduct. Furthermore, the evidence required to prove any specific action that could cause harm to competition has increased significantly, which in turn meant more flexibility to companies who seek to gain profit, in some instances through anticompetitive means (Thurman Arnold Project, 2020). Arguably, the idea behind this approach was that such liberalisation would stimulate economic and productivity growth, in turn benefiting consumers through lower costs and innovative products.

The Chicago School of antitrust played an important role in the shift to a more loose approach towards anticompetitive conduct. The key idea was that the government should only interfere, when there is direct evidence of such conduct (Hovenkamp & Scott-Morton, 2019). Furthermore, the advocates of this thought believed that markets will self-correct any failures, and that over-enforcement could damage the economy by stifling procompetitive conduct, and therefore the risk associated with over-enforcement outweighs those of under-enforcement. However, as it was discussed in the previous chapters, the Big Tech entities have achieved so much market power, and operate in totally different economic realities that the conventional theories put forward by Chicago School may not apply seamlessly. The business dynamics of digital markets, emphasised by network effects and barriers to entry have challenged the traditional antitrust norms, showcasing a necessity for reevaluation of enforcement practices in this fast changing landscape.

Furthermore, underenforcement is further evidenced by several issues. First, enforcement agencies and courts have allowed too many mergers between competing firms, without scrutinising them. For instance, the acquisition of Instagram (and similarly Whatsapp) by Facebook in 2012 for 1 billion USD. At the time of the transaction, some people could have doubted the decision to pay such an enormous amount for a small, but promising start-up, but now it is evident that by going through with it, Facebook successfully eliminated any possible threats to its dominance for years to come. For some, it has even become a much superior product, compared to Facebook itself. However, this is not a standalone occurrence, and the trend is similar across the board for Big Tech. Researchers found that more and more startups are being acquired rather than going public, a dramatic increase, from 10% to 90% over the last three decades (Ederer & Pellegrino, 2023). This in turn, potentially reduces the possibility of the rise of new startups that can challenge the Big Tech companies. Similar as of Quidsi's acquisition by Amazon (as discussed in the case studies) and several other cases showcases the fact that agencies and courts have failed to see the consolidation occurring by Big Tech.

Second, there have been very few major antitrust challenges of anticompetitive conduct since the famous case of "U.S. versus Microsoft Corp." in 1998. Government accused Microsoft of monopolising the personal computers market and engaging in several anticompetitive conducts (Rubinfeld, 2004). Microsoft agreed to settle and the case to some extent set a precedent on how antitrust laws could be applied to the software companies of the 20th century. Looking back, it is evident that this case to some extent paved the way for some new technological firms to flourish. We can only guess, but if Microsoft was not tamed by the authorities at that time, who knows if companies like Facebook or Google would have ever reached the success levels of today. Most probably Microsoft would have pushed further against Google's search engine in Microsoft's operating system, or created a competing social network to quickly crash Facebook.

Third, antitrust laws and enforcement agencies have predominantly been backward-looking. Therefore, more suited to address market conditions which already have taken place. This in turn raises important questions about the agility of antitrust enforcement in a digital economy. As modern markets move rapidly, by innovating through technological advancements, antitrust laws of yesterday often lag behind to tackle the new business models symbolic of the digital age.

However, even if we assume that antitrust enforcement has been successful for the broader economy, the challenge of enforcing in the era of Big Tech and digital platforms underlines new issues. The platforms create opportunities for unique types of anticompetitive conducts that were not present in the past, in turn raising new economic and conceptual challenges for enforcement (Morton et. al., 2019). That being said, the Big Tech and new realities it has created, may require a revised look on antitrust and regulations.

8.3 Proposed Regulatory Frameworks

As discussed previously, current antitrust laws and their enforcement levels over digital platforms and broader Big Tech, underlines the need for a closer look at the possible remedies and updated regulatory frameworks. Many scholars and policymakers have been calling for taming the big tech platforms, some suggesting to break them up, separating platform and commerce (Khan, 2019) or improving antitrust enforcement. This section investigates possible regulatory frameworks by discussing proposals by breaking them into two groups, (1) governing digital platforms through competition, and (2) governing tech platforms through regulations.

8.3.1 Governing Digital Platforms Through Competition

This approach would entail reforming current antitrust laws to better address the anticompetitive nature of the digital platforms and Big Tech, so that it promotes competition in the market. Possible remedies could include stricter reviews on

potential Merger and Acquisitions, predatory pricing and vertical integration that entities can employ to consolidate the market. Next, we will discuss three main changes that could be implemented to better address the challenges posed by digital platforms.

1) Vertical Integration and Conflict of Interest

One of the most significant concerns is related to the level of vertical integration happening within Big Tech and digital platforms as we have discussed in the previous chapters and case studies. Therefore, current antitrust does not adequately address this and the potential conflict of interest that could arise as a consequence. In the context of digital platforms, we have seen in the case of Amazon, how it can benefit from vertical integration, by using its dominance in one sector, to put itself in advantage in another line of business. Furthermore, vertically integrated platforms may potentially discriminate against their contemplators. Imagine a case where Amazon tries to push third-party sellers to use its logistic services, and if not accepted, potentially using various discriminatory tools.

A possible solution to address this issue, could be to review possible mergers that could enable vertical integration, much stricter and in some instances even ban them. Under this approach, all possible deals that could enable any type of conflict of interest should be scrutinised by authorities. Under current rule of law, only mergers which exceed a certain amount of monetary value are subject to review. A new, stricter approach could include an automatic review of any merger that could entail vertical integration and possible conflict of interest. First, merging entities should be responsible for proving that the transaction will in fact create efficiencies and make guarantees that it will not give rise to conflicts of interest or in any way take advantage of its market power. Second, a platform which has a dominant position in the market, for instance exceeding 50% market share, should be limited from entering other lines of business in which it already serves as a platform, so as to avoid a situation where platform competes with players who depend on it. In this scenario,

Amazon would be prohibited from directly competing with third-party sellers while at the same time running the platform. Similarly, Apple would not be allowed to compete on the App Store with the likes of Spotify etc. Third and the most extreme remedy could be to decouple the platform from other business units, in order to avoid conflict of interest at all. In this scenario, both units which serve as digital platforms would be managed as separate entities. However, this approach could require a strong political will, while investigating the possible negative consequences of such a solution.

2) Mergers and Acquisitions Between Competing Players

Unfortunately, the current antitrust frameworks have allowed for too many mergers and acquisitions, which in turn led to increased market power and reduced competition. Killer Acquisitions should be banned and if evidence is found that the dominant player buys a smaller competitor for a sole reason of eliminating competition, heavy consequences must be established for such conduct. Consolidation of market power is another serious matter that should be prevented. For instance, Facebook's acquisitions of Instagram and Whatsapp, shouldn't have been allowed, as consequently the dominant player successfully eliminated any potential threats for years to come. Reforms should involve stricter review of any merger that contains acquisition of smaller players by dominant ones in their respective markets. The possible solution could include a comprehensive review of the long-term impact of these transactions on competition and innovation, rather than just short-term impacts.

3) Predatory Pricing

Another important recommendation that is being put forward by many scholars, is to redefine the doctrine of predatory pricing, to reflect the realities of digital platforms. This would require abandoning the recoupment requirement in cases of below-cost pricing by dominant platforms (Khan, 2017). Current approach requires proof of the fact that a firm engaging in predatory pricing, would raise the prices in the long term,

to recoup the losses it accrued. However, as discussed in the early chapters, tech giants like Amazon, could use this tactic to successfully eliminate competitors, as dominant platforms are well positioned to fund predation. Lina Khan, in her nominal work "Amazon's Antitrust Paradox" suggests to consider introducing a presumption of predation for dominant platforms, which are found to be selling products below cost. In this case, a possible solution could be to require dominant platforms to be more transparent with their pricing strategies, and at request of authorities to provide a full source of data, publishing the decision making process of pricing algorithms.

8.3.2 Governing Digital Platforms Through Regulation

Earlier we discussed the first option to govern Big Tech by promoting competition and therefore limiting the power any single entity can accumulate. However, another popular option that has been discussed by scholars and policymakers is to acknowledge the fact that these big technological firms are monopolies or oligopolies in their respective markets and regulate them instead. Some proposals include a creation of a separate body to govern the digital arena - "Digital Authority" (Stigler Report (Sigler Committee on Digital Platforms, 2019), while others suggest to regulate digital platforms in a similar fashion of public utilities (such as, railroad, banking and telecommunication). Below we will discuss these recommendations that could be implemented to ensure a more transparent, equitable and competitive digital market environment.

1) <u>Public Utility Regulations</u>

The notion of public utility regulations is not new, and was widely adopted and applied in the 20th century. It was used to regulate the technologies of the industrial age, such as railroad, bridges, and later telecommunications. The idea was that these industries should be available to the public as a form of universal service, and therefore entities having control over these sectors should not abuse their monopoly power. Considering that firms like Amazon which serves as an essential infrastructure

for consumers and sellers of goods or Apple's App Stores which is the only available distribution channel to download apps, applying public utility regulations to parts of the Big Tech business is worth considering. Parallels could be drawn between business practices employed by the railroad industry and the technological giants. Similar to Amazon and Apple (as discussed in case studies), railroad entities had interest in the coal mining industry, in a sense having a dual role. For instance, a railroad company could provide preferential treatment to its own logistic operations in other lines of businesses, such as lower transportation rates and prioritised access to rail services, while discriminating against other coal producers. We have seen how digital platforms could employ similar tactics, in turn harming the competition.

Furthermore, public utility policies generally concentrate on three main ideas: (1) ensuring nondiscriminatory pricing and services, (2) regulation of rate-setting, and (3) stipulating capitalization and investment requirements (Khan, 2017). Applying the first two to digital platforms could tame potential monopolistic behaviours of Big Tech. For example, nondiscriminatory policy could prohibit entities from favouring their own products and services, while levelling the playing field. Rate setting policy, for instance, could be applied to platforms like App Store, where services like Spotify were forced to pay "Apple Tax", for in-app purchases. One option could be either to allow such services to use different payment methods, or let's say force companies like Apple to reduce the tax percentage, so that competing players are not at disadvantage. Another alternative could be to apply the same tax levels to Apple's own apps too, but important is that collected transaction fees do not "go from one pocket to another". Regulators could come up with different ways to ensure that Apple Tax does not put extra burden on contemplators, by applying high tax rates contemplators.

2) Digital Authority

Some scholars have suggested the creation of a unique regulatory body that oversees digital markets. Digital Authority, as they propose, would concentrate on ensuring fair

competition, data privacy, consumer protection and growth of innovation in digital markets. Different from current frameworks, the new established regulator would be forward oriented, rather than backward-looking. Therefore, it is important that such a regulatory body has tools and knowledge to better understand the fast paced nature of digital platforms. For instance, it could set industry standards and guidelines for technological business, so that the rules of the game are better showcased. Furthermore, it could potentially promote the rules and regulations such as interoperability between platforms (imagine if Apple and Google's respective app stores could operate between themselves), data mobility (making abandoning one social network for another easier) and etc. By addressing market failures in a much quicker manner, promoting competition and enforcing transparency, a Digital Authority could offer a balanced and adaptive regulatory framework to ensure an innovative digital economy.

8.4 Conclusion

The rapidly evolving nature of the digital economy has given a stage not only for the rise and dominance of the Big Tech companies, but also presented various challenges that traditional regulatory frameworks fail to address. This thesis has discussed the very nature of these challenges, starting from the economic theories that apply to Big Tech monopoly power by providing real world examples of their market dominance. Through case studies we analysed the business strategies these companies employ, and the impact they have on competition, innovation and broader economy.

The regulatory challenges posed by these tech giants, further complicates the issue, as traditional antitrust frameworks are not equipped to fully address unique issues of digital monopolies. The idea of governing Big Tech through competition or as utilities offers a possible solution, but the cost of implementation and political will required might be too high. On the other hand, the idea of using a combination of tools, in pair with creation of a specialised body, such as Digital Authority could be a

forward-looking solution, and by design it would be able to adapt to the very foundation nature of digital platforms.

However, as Big Tech is not limited to national borders, there is a necessity for international cooperation in designing regulatory solutions. Harmonisation in creating regulations, would also support those entities to better navigate their strategic business decisions. Otherwise, navigating through different jurisdictions could be a nightmare for Big Tech entities.

As we move further into the digital age and new technological advancements in artificial intelligence, the necessity for effective regulation becomes more and more clear. The findings of this thesis contribute to the discussions regarding Big Tech regulation, providing a nuanced understanding of the current state competition enforcement and potential solutions for governance. While there are challenges in designing proper solutions, let’s not forget opportunities these new regulatory frameworks could entail, such as a more equitable and innovative digital economy.

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