Antitrust Law Losing Grip on Digital Platform Monopolies:
Lessons from the Microsoft Antitrust Case

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Abstract. This thesis aims to answer if antitrust is capable of regulating digital platform monopolies in the United States. The Microsoft antitrust case of 1998-2001 is used as a case study to provide lessons for antitrust regulators today. Four primary sources from the Department of Justice are manually coded and analyzed, namely the Findings of Fact, Conclusions of Law, Final Judgment, and the Competitive Impact Statement. These documents were accompanied by secondary sources to account for lacking relevant information. The important lessons from the case study are that (1) prices form an inconclusive criterion for analyzing consumer welfare in the modern age, (2) trials need to move quickly, else remedies will not have the desired effect in the rapidly changing technology sector and (3) remedies need to be concrete and oriented on prevention versus punishment. Based on these findings, accompanied by prominent literature on regulating digital platform companies, the thesis concludes that antitrust is currently not capable of regulating digital platform monopolies in the United States. The thesis argues that antitrust has not managed to keep up with the rapid innovations of technology and therefore requires a substantial update in order to conform to the demands of regulation in the 21st century.

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1. Introduction

In recent years, the immense influence, power, and market share of the largest digital platform companies in the United States have evoked concern among American politicians, scholars, and others. Some of these companies, Alphabet (Google), Amazon, Facebook, and Apple, have become so large that if their combined revenues were interpreted as the GDP of a country, they would be ranked 18th in the world (Wallach 2020). In the last decade, digital platform monopolies have bought hundreds of smaller companies, arguably removing any form of competition they encounter. This has serious consequences for innovation in the sector, the welfare of consumers, and the inability of new companies to enter the market (Landau 2020, 44-48). Not only do these monopolies pose a serious threat to the economy, but they also have generated privacy concerns to their billions of users whose internet activity data is sold to external companies. Users no longer have control and are realizing that everything they do online is being monitored (Valent 2020). Despite the significant contributions digital platform monopolies have provided through their astonishing technological products and platforms, the concern has become too large for the United States Government to remain lax in regulating.

Currently, antitrust law forms the basis for regulating monopolies in the United States. It was first introduced in the 1890s to prevent trusts from obtaining undesired political power and to preserve the U.S. economy. However, the assumptions of market power used to construct antitrust in the past increasingly seem outdated for regulating the digital platform industry based on two general arguments. First, antitrust currently applies the Chicago School of antitrust, where legislation no longer focuses on competition or the market share of a firm, which it originally did. Instead, efficiency and the term consumer welfare are central, which only consider the price consumers pay for a product or service. Essentially, as long as consumers are not the victim of uncompetitive prices, firms are permitted to become as large as they desire which has resulted in hundreds of mergers made by individual firms in the past decade. Consequently, their market share has rapidly increased (Landau 2020). A substantial number of scholars agree that consumer welfare is ill-defined, especially in the modern age where the definition does not address data privacy, firm size, and innovation which could ultimately be of equal importance to price for the consumer (Orbach 2010). Second, regulation must permit monopoly power in the digital platform sector to a certain extent because the nature of the sector requires it for companies to be successful. Digital platforms are characterized by high economies of scale, network effects, price discrimination, bundling, big data, and vertical integration. Since these traits are natural in the sector, regulators struggle to determine when companies make abuse and violate antitrust policy (Eleodor 2019).

In addition to these regulator implications in antitrust, digital platforms pose a threat to society for privacy is no longer an item that consumers can choose from in the digital age due to the absence of

competing platforms. The digital platform monopolies have no incentives to increase security for consumers as they will remain loyal to the platform due to a lack of viable alternatives. In addition, there is no legislation present in the United States specifically designed for the collection of consumer data to fall back on, making consumer internet data prone to data breaches. Legislation has only been written for federal protection; congress is yet to pass a bill to protect consumers' data (Valent 2020; Pasquale 2013). Given the substantial relevance of data privacy to society, implications are briefly touched upon in the theoretical framework though left out in further analysis for it does not form the main scope of the thesis.

This thesis asks: is antitrust capable of regulating digital platform monopolies in the digital age in the United States? In doing so, the thesis will incorporate lessons learned from the Microsoft antitrust case that began in 1998. Here 'digital platform (monopoly)' is used loosely as an overarching term for the giant technology companies that incorporate some form of a digital platform such as Amazon, Facebook, Twitter, Netflix, Apple, and Amazon. The focus on the United States in this thesis was determined due to a couple of factors. First, the United States boasts a more liberal and capitalist economy where (strong) regulation is typically not admired which forms an alternative view than in the EU for example (Löfstedt en Vogel 2001). Second, it is particularly in the United States where digital platform monopolies have obtained astonishing market share in their sector (Landau 2020). The Microsoft antitrust case forms the ideal case study because it involves a company that was active in a sector similar to that of digital platform companies today, which was regulated in the United States due to its monopoly power. The case study provides the causes and effects as well as the advantages and disadvantages of regulation which can be applied to the status quo. By extracting lessons learned from this case, a more conclusive answer can be given to the research question. The research into Microsoft's antitrust case will incorporate the primary sources of the Department of Justice, namely the Court Finding of Facts, Conclusions of Law, Final Judgment, and Competitive Impact Statement. These primary sources will be accompanied by secondary sources, to help articulate the variety of scholarly opinions on the case as well as a long-term evaluation of the measures taken.

Due to the massive impact and size of digital platform monopolies, interpreting if antitrust is capable of regulating them through the lens of one discipline will not illustrate the complete picture, and thus the thesis opted for an interdisciplinary approach. The thesis applies Economic History because the inherent cause for political and legal interference (antitrust) in the sector is due to the presence of monopoly forming, which can only be understood if the economic forces and concepts are addressed. Without understanding why digital platform monopolies are a problem, providing an answer to the research question is impossible. Philosophy is also applied, due to its ability in method to pose critical questions about phenomena we perceive as normal. The discipline provides a conceptual analysis of central concepts and terms in addition to a normative discussion of privacy issues. This interdisciplinary

approach contributes to literature in the field for an analysis incorporating privacy, antitrust, consumer welfare and a case study to platform monopolies is nearly inexistent.

Part two of the thesis consists of a theoretical framework, describing the history of antitrust and the implications of digital platforms for regulators. Part three elaborates on the methods and sources, providing an introduction to the Microsoft case, an overview of the primary sources, and an explanation of the method coding. Part four presents an analysis of the case findings followed by the conclusion in part five.

2. Theoretical Framework

2.1. The History of Antitrust

In order to determine if antitrust is capable of regulating digital platform monopolies in the modern digital age, literature must clarify why regulation for monopolies exists to begin with. Monopolies can be preferable and undesirable. When applied in a positive manner it can produce an output price lower than if there were two competing companies. These monopolies are typically utilities such as sewage, water, and electricity companies, where, for example, it would be more expensive to have two pipelines under each house where consumers can choose from. However, monopolies can become a threat when they no longer produce an optimum price for consumers. If a monopoly abuses its position, it is capable of charging a price higher than it would charge if the market was competitive. Consumers are forced to buy the product due to a lack of alternatives. Consequently, the consumer surplus (the difference between the price of a product and that what a consumer is willing to pay) decreases because several consumers cannot afford the product or service which has vibrant negative outcomes to society (Depoorter 1999, 498-500).

In addition to the threat of increased prices for consumers, monopolies began forming other threats in the United States at the end of the 19th century. Standard Oil's market share in the oil industry increased from roughly 4 to 90 percent in the 1870s. This rapid increase in market share and power caused for concern among politicians and scholars. However, their concern was not for increased prices as oil prices remained the same, but rather for fair competition in the sector. The underlying reason was that Standard Oil had grown in the sector through hostile acquisitions. Theoretically, businesses are expected to improve their market position through fair competition. The firm that manages to lower its unit cost and in turn offer the consumer a lower price is rewarded with an increase in market share. However, Standard Oil had obtained dominance through railroad rebates, often using secret discounts forcing rivals to sell out. As a result of Standard Oil's success in eliminating competition, the same pattern was realized in other industries including whiskey, sugar, lead, and cottonseed oil. Finally, in 1890 congress passed the first form of monopoly regulation in the 'Sherman Antitrust Act' to prevent

similar situations from taking place in the future. Large companies like Standard Oil were otherwise named ‘trusts’ at the time, and thus the term antitrust was born (Lamoreaux 2019, 96-99).

The Sherman Antitrust Act was followed by the Clayton Antitrust Act in 1914 which added sanctions for price discrimination, price-fixing, and other unfair business practices. Both acts are enforced by the Federal Trade Commission (FTC) accompanied by the Antitrust Division of the U.S. Department of Justice (Landau 2020, 40). The FTC became responsible for determining whether a firm was engaged in anticompetitive pricing or practices, which proved to be a complex task. Corporations constantly invented new methods to circumvent antitrust regulation, consequently followed by new terms of regulation to match them. Finally in the 1930s antitrust officials decided no longer to focus on attempting to define the line between competitive and anticompetitive action and instead started focusing merely on the size of firms (Lamoreaux 2019, 94-95).

The reformation of antitrust in the 1930s evoked backlash in the form of what would become known as the ‘Chicago School of Antitrust’. At the time, inflation was high, the economy was stagnant, and the manufacturing sector was on the brink of collapse (Lamoreaux 2019, 110). Antitrust had become all about anti-free-market forces and formed an existential threat because it was an expression of social philosophy rather than an economic tool to increase efficiency (Orbach 2010, 143). Therefore, antitrust authorities decided not to focus on the size of a company, but rather on the effects for the consumer. In essence, the Chicago School of Antitrust implied that, as long as consumers are not required to pay higher prices for the services or goods they are purchasing, mergers are permitted and firms can become as large as they like. Where prior to this change antitrust was concerned with competition and size of companies in the market, it was from here on out concentrated on consumer welfare (Landau 2020, 44).

The term consumer welfare was first applied in antitrust by a follower of the Chicago School, Robert Bork, in his book *The Antitrust Paradox,* published in 1978. He presented a detailed analysis of the Sherman Antitrust Act and its effects on the economy in the prior decades. Today, many scholars and practitioners of antitrust agree that Bork made a mistake in his definition of consumer welfare. Orbach (2010) identifies Bork’s line of thought: “… [Bork] claimed that competition necessarily promotes allocative efficiency, which in turn is a driving force of prosperity, and, as such, it serves individual consumers as well” (143). In other words, when Bork used the term consumer welfare, he actually meant allocative efficiency combined with other definitions. Allocative efficiency is focused on the consumers’ willingness to pay, which in practice is achieved when consumer demand for a product or service is precisely met by supply from businesses in the market. Consumer welfare on the other hand incorporates the well-being obtained from the product or service by the customer, which is not identical to simply matching the consumers’ willingness to pay (Orbach 2010).

Unfortunately, the Supreme Court failed to point out this misinterpretation of consumer welfare and applied Bork's analysis to the law. As a result, many generations of law students and practitioners have apprehended a false interpretation of the inherent goal of the antitrust methodology. In (proper) definition, antitrust law cannot maximize consumer welfare. However, it may maximize consumer surplus, the difference between what a consumer is willing to pay and what he or she actually pays for a product or service (*perceived* welfare of consumers). In addition, antitrust can also maximize total surplus, the combined 'area' of the consumer and producer surplus (*perceived* welfare of consumers and producers) (Orbach 2010, 137-139). Nonetheless, even if Bork had used proper definitions in his analysis, his conclusions would still have caused complex situations for future regulators of antitrust due to the narrow focus on price. The digital platform monopolies of today comply with the price-focused antitrust requirements posed by Bork yet still cause for decreased competition and arguably harm consumers.

Currently, the FTC and DOJ still make use of the Chicago School of antitrust and Bork's definition of consumer welfare, from which the consequences are evident. The companies Facebook, Amazon, and Google have been permitted to make an astonishing number of mergers throughout the last decade. Facebook has bought 79 companies, together worth $22 billion while its market capitalization is $471.41 billion. Amazon on the other hand has purchased 86 companies, worth $7 billion combined, while its market capitalization is $1.017 trillion. Finally, Google has acquired 223 smaller businesses worth $19 billion, in contrast to its market capitalization of $851.75 billion (Landau 2020, 46). The astonishing number of mergers and comparison in size to 'competitors' of these companies seems relatable to the monopoly Standard Oil was building at the end of the 19th century. Nonetheless, as long as antitrust regulators continue to apply the Chicago School of antitrust, digital platform monopolies remain innocent of violation as they keep costs low for consumers. Noticeably, the EU utilizes the post-Chicago or ordoliberals approach to antitrust, exceptionally different from the Chicago School. Ordoliberals believe that a minimum number of competitors are necessary to maintain a healthy market with competitive prices. In essence, there is a guaranteed number of competitors (that are efficient), no matter how small, that receive maintenance if required to preserve competition. In Europe competition is primary, not consumer welfare (Pera en Auricchio 2005, 159-160).

The concerns for the rapid growth in size of digital platform companies have come from many parts of society, of which the group with the most concrete concerns have called themselves the "New Brandesians", originating from the author Louis Brandeis who wrote "A Curse of Bigness" in 1914. He believed that if no further actions were taken, big American businesses would become larger and more politically powerful than the government which would eventually harm the democratic system in place. This perception is similar to what the New Brandesians perceive today, claiming that digital platform monopolies are involved in anticompetitive behavior and are even getting away with influencing the

American political system. They are specifically concerned with the current antitrust law that only focuses on the welfare of the consumer and ignores the size of companies as well as anticompetitive behavior (Lamoreaux 2019, 94). One member of this group, Lina Khan, author of the book *Amazon's Antitrust Paradox*, claims that current legislation fails to cover predatory pricing as well as integration across business lines. She conclusively argues for an alteration in the antitrust framework that replaces the focus on consumer welfare with a focus on market structure and competition (similar to the European approach). Essentially, she argues for re-introducing original constructs of antitrust instead of accepting the position dominant online platform monopolies have (Khan 2017).

2.2. Implications of Digital Platforms for Regulators

However, simply reapplying antitrust legislation used prior to the Chicago School is not an option. The reason is that technology and the complex nature of digital platform companies and Big Data are new concepts and will not apply effortlessly to the original antitrust framework. In the next five paragraphs, the special traits of digital platform monopolies will be addressed, namely the unique cost structure, network effects and increased returns, price discrimination and bundling, big data, and finally vertical integration. By understanding these unique traits, the reader comes to understand why regulating monopolies is exceptionally difficult in the digital platform sector.

First, digital platform companies are characterized by a unique cost structure. Companies typically own a platform designed to gather Big Data, defined by Ohlhausen and Okuliar (2015) as "the collection, storage, and analysis of datasets that have volume, significant variety, and high velocity, sometimes fed by the melding of online and offline data." (121) The technology for these complex platforms requires high upfront investment costs yet boasts low marginal costs because introducing a new agent to the platform has minuscule costs. Consequently, digital platforms are most effective in economies of scale, which occurs when the costs (of designing a platform in this case) are divided among a large number of agents. This cost structure is comparable to that of a natural monopoly (discussed in section 2.1.) and therefore digital platform companies are often defended for their dominant position. However, many of their investments, aside from high upfront costs and innovation, have been used to maintain an arguably inefficient monopoly position (Rahman 2020, 38).

Second, digital platforms realize network effects and increasing returns. Network effects imply that a potential user benefits from applying to a platform that already has a large(r) number of users while the platform benefits from the additional user. A practical example is the higher interest of a potential member to choose Facebook instead of social media platform X because his friends and family already make use of it. Facebook benefits because the marginal costs are nihil per additional user yet provide revenue as the user's data can be sold to advertisement companies. Since digital platforms are reliant to achieve economies of scale quickly to benefit from increased returns on investment costs, they typically

will keep prices low early on to out-price competitors and win the market and consequently raise the price once competition is absent, also known as predatory pricing. Companies will also try to 'lock in' their users to make switching to competitors' infrastructure difficult. An example of this is Apple who 'lock in' its competitors to iCloud where users store their data. Apple has made it complex and time-consuming to switch this data to an Android device, at which point users choose to continue using Apple. By locking in users, potential competitors will have fewer users to benefit from network effects and thus less returns for investment costs (Eleodor 2019, 51; Rahman 2020).

Third, discrimination and bundling are actions typical in the digital platform sector. Since digital platform companies can monitor consumers' willingness to pay through big data (consumer purchase history), they can discriminate through pricing. Although some argue that second-degree price discrimination (discount when buying a larger amount of a product) and third-degree price discrimination (segments of the population targeted given a specific attribute, such as student discounts) have benefitted society in other industries and could make digital platforms even more accessible, the accuracy and scale of big data make consumers too vulnerable. Similar to price discrimination, bundling also occurs in the digital platform industry. This takes place when one good is tied to the sale of another product. Firms take advantage of consumers' high willingness to pay for one product by charging a higher price on the bundled product. Digital platform companies will often make use of bundling to enter new markets and lock customers into their system (e.g., Microsoft tied Internet Explorer to its operating system Windows to overtake the browser market). Since price discrimination and bundling can be efficient, a grey area emerges which is complex for regulators, as will be pointed out in the analysis of the Microsoft case (Rahman 2020, 43-45).

Fourth, the digital platform sector is strongly characterized by the collection of data. The data is used to personalize the output for the consumer based on preferences that data indicate and also sold as a commodity to advertising companies. Data has become one of the most valuable commodities and is one of the main explanations for the lucrative success of digital platform companies. Data has caused increased privacy concerns and therefore forms a threat to society. Given the threat it poses, some politicians and scholars believe it should be considered by regulators. This is further touched upon later in this section of the theoretical framework (Rahman 2020, 46; Eleodor 2019, 51).

Fifth, vertical integration regularly occurs in digital platform companies. Ever since the Chicago School, integration has been permitted across different business levels resulting in the large market share of digital platform monopolies. The complexity here is that on one hand integration can be beneficial to the consumer (e.g., Google Search and Google Maps function effortlessly together) and yet can also be anticompetitive and complex to indicate. The most evident method to measure anticompetitive behavior is to define the relevant market from which one could determine the harm to consumers though in

practice this is complex also requires subjective judgment (made clear in the Microsoft case, section 4.3.) (Rahman 2020, 49-50).

Many of these requirements for a successful platform company can be interpreted as a vicious circle, as large companies already have many users from which they can gain data, while the large user tally makes it easier to attract new users through network effects. The high fixed costs of a digital platform, combined with the importance of network effects, bundling and Big Data make market entry very difficult, ultimately leading to a 'winner-takes-all' model. Consequently, the digital platform requires monopolistic-like circumstances to function properly, leaving many people wondering if regulators are equipped with proper tools to maintain competition in the sector (Eleodor 2019, 51-52).

Aside from the monopolistic-like environment that these five factors create in the digital platform industry, Big Data alone has caused problems for regulators as it has sparked a massive debate, especially in terms of privacy loss. As Sandel (2012) perfectly puts it, "the more markets extend their reach into noneconomic spheres of life, the more entangled they become with moral questions." (88) The question that remains is how to defend expectations of privacy while realizing the benefits of Big Data. In the proper definition of the term, which Bork did not apply, this debate eyes more concerned with 'consumer welfare' than the economic counterpart used in antitrust only advocating for the price of the product or service. As a matter of fact, measuring price for consumers in the digital platform sector is nearly impossible. Although a Facebook account or Google search is free of charge (and thus according to the law not subject to antitrust), users are providing the tech giants with valuable internet data that they can sell for large prices to advertising companies, which perhaps should be considered in antitrust.

Scholars have already undertaken research in determining if Big Data should be considered in antitrust. Some argue that although Big Data does imply a dimension of competition, it should not be subject to antitrust. Their first argument is that antitrust legislation should not intervene since consumer welfare is not harmed nor is there a loss in efficiency. Second, the potential bargaining issues between the data collector and the user likely fall under consumer protection law, not antitrust. Third, attempting to fit consumer protection concerns in antitrust is unnecessary and could lead to confusion and doctrinal issues in antitrust. They claim that keeping them apart is organization-wise preferable and easier for legislative branches to grasp. They also present a selection of reasons that discourage antitrust intervention, such as the efficiency of digital platform monopolies and a potential loss of innovation in new products (Ohlhausen en Okuliar 2015). Accordingly, Sokol (2016) believes that antitrust should not intervene with Big Data. He states "Until antitrust authorities can match theories of harm with specific factual circumstances and show negative competitive harm to consumers, the antitrust case against Big Data is a weak one." (1161) Furthermore, he warns regulators to be cautious with limiting

data collection or forcing digital platform companies to make all user data public as this could ignite an even larger privacy concern (Sokol 2016).

On the other side of the debate are scholars who claim that antitrust and Big Data privacy concerns are related, such as Mehra (2020), who provides three arguments. First, since privacy can be observed as a dimension of the product or service that the customer purchases, it is an aspect of competition. Nonetheless, applying antitrust to Big Data in practice is much more complex than traditional economic factors like price and quantity. Initially, antitrust neglected privacy concerns since the products or services sold by digital platforms are often free of charge. However, regulators are now realizing that the price one pays for the free platform is their internet activity data. Second, antitrust and privacy concerns of Big Data are related in the case of price discrimination. Nonetheless, this was left out of antitrust because a firm can only price discriminate when it has monopoly power and thus unnecessary to address twice. Third, privacy through Big Data becomes a concern for antitrust when it creates a barrier of entry. In this situation, market entrants have difficulty competing because existing firms have a stable and large data source (Mehra 2020).

Frank Pasquale (2013) further analyzes Mehra's first argument stating that due to monopoly forming, privacy is no longer considered a quality of a digital platform service that consumers can choose from. This is not because consumers do not care for privacy, but rather because the sector lacks viable alternatives due to the absence of competition. Digital platform monopolies have no incentive to improve their privacy terms and condition because consumers are unlikely to transition to a different platform. If the monopolies were devoted to efficiency and monetization, they would offer consumers alternatives, such as paying (more) for a Facebook account to ensure that the user's data is private. Since this is not an offer digital platform companies provide, antitrust and privacy legislation should focus on imbalances in power, rather than efficiency or consent. Pasquale also suggests a 'watching the watchers' approach, similar to what the Department of Health and Human Services (HHS) has required for patients' medical records data. Here, entities must provide patients with their medical data and how it was used if they wish to see it. By implementing a similar system, antitrust regulators will have less trouble determining when firms are acting in an anticompetitive manner (Pasquale 2013).

Since the market fails to regulate privacy, many would expect legislation to cover it. Nonetheless, specific legislation for consumer data collection is inexistent as digital platform companies currently self-regulate data collection through consumers' consent when they make use of the platform. The FTC is responsible for consumer protection (and regulating antitrust) and have taken administrative measures to ensure that digital platforms are sanctioned when violating their own terms of agreement. For example, if the terms of agreement state that data will only be tracked when using a given application on a smartphone and it turns out that data was also extracted outside of the application, the digital

platform can be sued. Similar to Pasquale (2013), Megan Valent (2020) argues for more transparency from the digital platform companies as a solution to privacy concerns. She claims that companies should not only make clear which data is being collected but also clarify the opt-in or opt-out procedure as contracts currently make it complex for consumers to understand. A second suggestion Valent provides is an initial opt-in approach, where consumers are made clear that they are giving consent to the digital platform company for obtaining their data. Nonetheless, federal and state legislation will eventually be required to completely solve privacy issues in the sector (Valent 2020).

In contrast to the United States, the EU has an institution in place that regulates privacy, namely the General Data Protection Regulation (GDPR). The GDPR has managed to give consumers rights to their personal data, even after it has been sold to an external company. The consumers are also protected through remedies to violations that digital platform companies make. The United States on the other hand only has the California Consumer Privacy Act (CCPA) which has not even been implemented yet and is likely not to (Mehra 2020).

The theoretical framework presents a number of important findings. First, it elaborates the history behind antitrust and the important transition to the Chicago School which has had substantial effects on regulation in the 21st century. The unique characteristics of the digital platform sector provide an explanation for the complexity behind applying antitrust law to monopolies. This has been accompanied by the relevance of privacy concerns that regulators need to keep in mind. Despite literature generally advocating that antitrust and privacy concerns are interrelated and thus regulation should consider privacy, the rest of the thesis does not provide further arguments for doing so.

3. Methods and Sources

When correctly interpreting the theoretical framework, the reader concludes that there are many uncertainties and complex forces in regulating digital platform monopolies. Therefore, in order to improve answering the question 'is antitrust capable of regulating digital platform monopolies in the modern digital age?' the thesis incorporates a case study that involves a monopoly in a similar sector, the Microsoft antitrust case that initiated in 1998. In order to understand the analysis in the most optimal way, this section initiates by introducing the case where it also explains important basic legal background. Second, the relevant primary documents used will be explained. Finally, the manner in which the methodology coding was used in the thesis will be elaborated.

3.1. Introduction to the Microsoft Antitrust Case

The Microsoft case was one of the most important antitrust cases in the history of the technology sector. When it began in 1998, lawmakers were forced to reevaluate their methods for evaluating and defining

markets and products. The case brought forward the weaknesses in antitrust to evaluate the market, competition, and consumer welfare in technology. As a consequence of the complexity and magnitude of the case, a public debate commenced about government regulation hindering innovation and technological advancement in general (which will be reobserved in section 3) (Rahman 2020, 58-59; Page and Lopatka 2009).

In the 1970s Americans did not have personal computers at home. This was due to the high cost of such a computer and the complex long text-based commands that were required to operate the computer. All computers have an operating system, which is the backbone software that incorporates and controls all the hardware and software that the computer uses. In the 1980s, Microsoft developed a new operating system called 'Windows' that was more graphical than previously designed, making it simpler and more accessible to the average consumer which resulted in the computer-based world evident in the 21st century. Not only was Windows an operating system, but it also served as the software environment for which software developers designed their applications, such as word processors, calculators, games, and spreadsheets. As a result, most applications were written for Windows which provided complimentary goods (in the form of applications) to the operating system. Users preferred Windows because of the vast number of applications it could run, which was a result of network effects (discussed in section 2.2.). Due to these developments, Microsoft managed to obtain over 95% of the market share for operating systems by 1990 (Rahman 2020, 60).

In the 1990s the internet became a mainstream application that consumers desired on their personal computer. At the time Netscape Navigator was the leader of the Internet browser market, obtaining roughly 70% of the market share. The market position for browsers shifted when Microsoft introduced their own pre-installed browser compatible with Windows called Internet Explorer in 1995. Although this application benefitted consumers as it posed as an additional application that Microsoft could provide, the government suspected that Microsoft's Internet Explorer overtaking the browser market involved anticompetitive action. Behind the scenes, it indeed involved anti-competitive and predatory actions that heavily affected Netscape. As a result, the Microsoft antitrust case had started (Rahman 2020, 60-61).

The FTC began investigating Microsoft in 1990 and on May 18th, 1998, the U.S. Department of Justice, accompanied by the Attorney General of 20 States and The District of Colombia (collectively referred to as the government) issued four allegations against Microsoft. First, Microsoft was accused of illegally monopolizing the market for operating systems (OS) for Intel-compatible personal computers, in violation of §2 of the Sherman Antitrust Act (PC). Second, Microsoft was accused of forming exclusionary contracts with original equipment managers (OEMs) and internet service providers (ISPs) that aided towards maintaining their monopoly power, in violation of §2 of the Sherman Antitrust Act.

Third, Microsoft was accused of attempting to monopolize the market for internet browsers through their own product Internet Explorer by using illegal exclusionary tactics, in violation of §2 of the Sherman Antitrust Act. Fourth, Microsoft was accused of tying Internet Explorer to its operating system Windows, in violation of §1 of the Sherman Act (Economides 2001, 15; Rahman 2020, 61-62).

These allegations are based on the Sherman Antitrust Act, the first piece of antitrust legislation to be passed by The United States Congress in 1890. It has eight paragraphs, of which only the first two will be discussed because they are relevant to the Microsoft case. Paragraph one (§1) prohibits anti-competitive practices that restrain trade. As Economides (2001) phrases it: "Every contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations, is declared to be illegal." (17) This may include bundling or tying (touched upon in section 2.2.), which Microsoft is accused of doing with its browser Internet Explorer to Windows. However, in order for it to be a violation of paragraph one, the consumer must be harmed in the present or future. The harm can be measured in price, variety, quality, or hindering the process of innovation. However, without a consumer as the victim, there is no violation of the Sherman Antitrust Act paragraph one (Economides 2001; Conclusions of Law 2000).

Economides (2001) summarizes paragraph two as followed: "Every person who shall monopolize, or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations, shall be deemed guilty of a felony." (17) Consequently, monopolization is illegal when anticompetitive means are used to obtain and sustain the monopoly. To prove monopolization, the offender (Microsoft in this case) needs to have possessed market power and needs to have intentionally acquired or maintained the monopoly power as distinguished from attainment through superior product, business expertise, or historical accident. On the other hand, to prove attempted monopolization, the offender needs to have engaged in predatory or anticompetitive conduct with the specific intent to monopolize and there needs to have been a dangerous probability that the defendant would manage to achieve monopoly power (Economides 2001; Conclusions of Law 2000).

3.2. Primary Sources from the Department of Justice

The first primary document analyzed in the thesis was the Findings of Fact, issued by Judge Thomas Penfield Jackson on the 5th of November 1999. The document is a summary of the findings from the trial that lasted from the 19th of October 1998 till the 24th of June 1999. Judge Jackson had taken procedural shortcuts to accelerate the case, such as limiting the parties to twelve witnesses who had to submit their testimonies in written form instead of the usual oral form (Economides 2001, 10). The ineffectiveness of remedies as a result of rapid technological change posed as the motivation for swift procedural action in the trial. The document entails the following sections: a background, description

of the relevant market, Microsoft's power in the relevant market, the middleware threats, Microsoft's response to the middleware threats, Microsoft's response to the threats posed by Sun's implementation of JAVA, and the effect on consumers of Microsoft's efforts to protect the applications barrier to entry (Findings of Fact 1999).

The second primary source analyzed was the Conclusions of Law, issued by Judge Jackson in April 2000. The document was swiftly issued when Jackson realized that negotiation settlements were failing because a number of states felt harsher remedies were necessary than the Department of Justice had posed. The document is a conclusion based on the Findings of Facts, determining which allegations made actually violated the Sherman Act (Conclusions of Law 2000; Evans, Nichols and Schmalensee 2005, 24).

The third primary source analyzed was the Final Judgment. This document was issued on the 12th of November 2002, remarkably by a different judge named Colleen Kollar-Kotelly, for Judge Jackson was prohibited from continuing the case (explained in section 3). The Final Judgement poses as a solution for consumers by implementing relief to halt continuance and prevent recurrence of the violations of the Sherman Antitrust Act by Microsoft and to restore competitive market conditions. The sections are jurisdiction, applicability, prohibited conduct, compliance and enforcement procedures, termination, and definitions. The document mainly consists of legally constructed rules that Microsoft is to follow. Note that the final judgment is different from the Proposed Final Judgment that was created previously to the removal of Judge Jackson from the case. The Final Judgment includes all adjustments made and therefore is used instead of the Proposed Final Judgment (Final Judgment 2002).

Finally, the fourth document used was the Competitive Impact Statement, submitted by five attorneys (Malone, Hesse, Blizzard, Kelly, and Blake-Thomas) of the U.S. Department of Justice Antitrust Division on the 15th of November 2001. The document aims to conclude the case and make it comprehensive for the standard consumer. The sections of the source are the purpose of the proceeding, overview of the relief, description of the practices giving rise to the alleged violation, explanation of the proposed final judgment, alternatives to the proposed final judgment, remedies available to private litigants, and procedures available for modification of the proposed final judgment (Competitive Impact Statement 2001).

3.3. Coding

In order to extract the most important findings from the primary sources, they were manually coded. Four questions were constructed that would provide the most relevant information for answering the research question: Is antitrust capable of regulating digital platform monopolies in the digital age in the United States? The questions are: (1) Why was Microsoft accused of antitrust? (2) How was Microsoft sanctioned and regulated? (3) Was Antitrust capable of regulating Microsoft? (4) What lessons could

be applied to regulating digital platform monopolies? The four primary texts were read, from which sections were highlighted (in a color matching the question number) that provided relevant information for that sub-question. Since the primary texts occasionally lacked context or were incomplete to provide an answer to the question, secondary sources were used to fill in these gaps. The questions are broadly answered, incorporating background information to ensure that the reader comprehends the case as a whole.

4. Analysis

4.1. Why Microsoft Was Accused of Antitrust

As briefly touched upon in section 3.1., Microsoft had managed to convince application developers to develop their software for Windows because the operating system had the largest user base. This was relevant to application developers because similar to the digital platform sector today, their software was characterized by high fixed costs and low marginal costs. Since Microsoft's Windows had the most users, returns on investment costs were most certain for application developers here. As a result, Windows had the most applications to offer to consumers, strengthening network effects and making it extremely difficult for market entrants to offer a competitive operating system that featured so many applications (Findings of Fact 1999, 17-19; Evans, Nichols and Schmalensee 2005, 6)

Application developers write application software for an operating system. The operating system in place permits the application software to control hardware through APIs (Application Program Interfaces). APIs are defined as: "synapses at which the developer of an application can connect to invoke pre-fabricated blocks of code in the operating system. These blocks of code in turn perform crucial tasks, such as displaying text on the computer screen." (Findings of Fact 1999, 2-3) For example, a word processing application requests to print through an API. This API redirects the demand to the operating system which then orders the printer to print the document created by the word processing application (Evans, Nichols and Schmalensee 2005, 6).

Application developers write their software to match the APIs of an operating system such as Windows. However, a software platform called middleware would form an alternative to this procedure. Middleware is a software platform that is dependent on the interfaces that an operating system has, yet can provide its own APIs to application developers (Findings of Fact 1999, 13). In the second half of the 1990s, the most successful middleware software programs were the Netscape Web browser called Navigator and Sun Microsystems implementation of Java technology. The great advantage of Navigator was that it could be installed on 15 different operating systems. However, application developers only needed to write coding once. As a result, browser application developers could receive higher returns for their software development (Findings of Fact 1999, 36). Similarly, the company Sun claimed that

applications could be run on any operating system with a Java Runtime Environment. The implementation of these two software platforms would result in a lower barrier of entry because new operating systems could offer (roughly) the same (amount of) applications as Windows (Findings of Fact 1999, 38).

Aware of the threat middleware posed to its dominant position, Microsoft strove to prevent middleware technology from becoming sufficiently developed to erode the applications barrier. In 1995 Microsoft urged Netscape to withhold from releasing platform-level browsing software for 32-bit versions of Windows (the upgraded version of Windows that would become known as Windows 95). When Microsoft executives realized that Netscape would not be backing down, they came up with a plan that would make the Navigator Web browser unsuccessful. Microsoft realized that Navigator would only be of interest to application programmers if it obtained a high user number. To block a high number of users making use of Navigator, Microsoft bundled Internet Explorer deeply into Windows software, making it nearly impossible to remove Explorer and configure other browsers (Findings of Fact 1999, 77-79). As Brad Chase (Microsoft employee) wrote to his superiors in 1995: "we will bind the shell to the Internet Explorer, so that running any other browser is a jolting experience" (Findings of Fact 1999, 80). Microsoft countered the threat posed by Java by implementing their own version of Java for Windows that was less portable and compatible, meaning that an application written for Sun's Java would not perform optimally on Windows (Conclusions of Law 2000, 18).

Due to these actions, Microsoft was accused by the government of violating the Sherman Antitrust Act §1 and §2. In what follows, the four allegations made (already mentioned in section 3.1.) towards Microsoft are elaborated. The three violations of §2 are discussed first, followed by the violation of §1 as this is chronologically easier to follow.

First, Microsoft was accused of illegally monopolizing the market for operating systems (OS) for Intel-compatible personal computers. The relevant market where Microsoft had monopoly power was defined as the worldwide licensing of Intel-compatible PC operating systems. "An Intel-compatible PC is [a personal computer] designed to function with Intel's 80x86/Pentium families of processors or with compatible processors manufactured by Intel or by other firms" (Findings of Fact 1999, 3). Three arguments were made by Judge Jackson to prove that Microsoft obtained monopoly power in this market. First, Microsoft's market share in the Intel-compatible PC operating systems sector was enormous and relatively stable. In every year of the 90s, Microsoft's market share remained above ninety percent. Second, the firm's dominant position was protected by a high barrier of entry as already touched upon, a market characteristic confirmed by other firms (Apple and IBM). Third, consumers lacked a viable alternative to Windows, which Microsoft had for a large part created on their own due to their considerably large application catalogue (Findings of Fact 1999, 15-25). The allegation is only

complete when the monopoly position is obtained illegally (through anti-competitive action). This was confirmed by Judge Jackson who interpreted Microsoft's efforts to keep the barrier of entry high as a considered assault on entrepreneurial efforts that could have improved competition in the market for operating systems for Intel-based personal computers (Conclusions of Law 2000, 20).

Second, Microsoft was accused of forming exclusionary contracts with original equipment managers (OEMs) and internet service providers (ISPs) that aided towards maintaining their monopoly power. An OEM is a company that manufactures PCs, such as IBM PC Company or Dell. There were several results of the exclusionary contracts with OEMs, such as the fact that Microsoft had made it impossible to install Windows 95 or 98 on a PC without also installing Internet Explorer. They also made it impossible for OEMs and consumers to remove Internet Explorer. Furthermore, Microsoft ensured OEMs that if they were to install other browsers that this would cause system issues. The company believed that by preinstalling Internet Explorer and making it highly compatible with Windows, the OEMs would ultimately consider Internet Explorer the optimal choice. ISPs were added into the equation when Microsoft presented them with referral fees for installing Internet Explorer free in a house when the house was configured with internet access (Findings of Fact 1999, 98-99). This was detrimental to Navigator who charged 20 dollars for their browser (Rahman 2020, 20). This allegation was confirmed to be a violation of §2 of the Sherman Antitrust Act by Judge Jackson (Findings of Fact 1999).

Third, Microsoft was accused of attempting to monopolize the market for internet browsers by using their own product Internet Explorer by using illegal exclusionary tactics. As discussed in section 3.1., to prove attempted monopolization the plaintiff must show that Microsoft has engaged in predatory or anticompetitive conduct with a specific intent to monopolize and there needs to be a dangerous probability that Microsoft will succeed. Microsoft's predatory pricing conduct in the browser market is verified as Internet Explorer was offered free of charge, arguably in an attempt to remove competition and later raise it. Second, although Microsoft's top executives did not express the intentions to obtain monopoly position, their actions could not have had a different outcome. Through weakening Navigator's position in the market, there would be no other competitors paving the way for Internet Explorer's monopoly position. Third, the court agreed that based on the findings as a whole, there was a dangerous probability that Microsoft would monopolize the market for web browsers. As a result, Judge Jackson also confirmed the third allegation to be a violation of the Sherman Antitrust Act (Conclusions of Law 2000, 21-23).

Fourth, Microsoft was accused of tying Internet Explorer to its operating system Windows. Tying exists when "(1) two separate products are involved, (2) the defendant affords its customers no choice but to take the tied product in order to obtain the tying product, (3) the arrangement affects a substantial

volume of interstate commerce; and (4) the defendant has 'market power' in the tying product market." (Conclusions of Law 2000, 25) Although Microsoft complied with all these requirements, in order for tying to be considered illegal, it needed to have negative effects on the consumer. Illegal tying was confirmed by Judge Jackson, though it can be argued that there was no objective truth on the harm for consumers. On the one hand, Internet Explorer arguably harmed consumers because those that desired a browser-less PC were forced to have this which left less storage space available for other functions. In addition, consumers like schoolteachers or parents that preferred having a computer where children could not access the internet were hindered. Nonetheless, Microsoft significantly improved access to the internet as Internet Explorer was free (Findings of Fact 1999, 205).

Microsoft pleaded a defense to the allegations made based on six arguments. First, the tech giant stated that it had not broken the law because the Court of Appeals (court that regulates district courts) had ruled that Microsoft was permitted to add new features to Windows on the 23rd of June 1998. As a result, they claim it was legal to add Internet Explorer to Windows. Next, Microsoft argues that there was intense competition between them and Netscape which only benefitted the consumer in terms of product quality, not committing to any anti-competitive acts. Microsoft also argued that it did not have monopoly power in the market for operating systems. Microsoft's fourth argument stated that their leading position in the market could be taken over at any given moment in time by a new firm in the market. Furthermore, Microsoft pointed to their innovations in software and that it had improved rather than discouraged the innovation process in the sector. Finally, the company argued that they benefitted consumers rather than harmed them by connecting Internet Explorer to Windows. The browser was free in contrast to Netscape's Navigator, required no extra effort in downloading and was more compatible with the operating system (Economides 2001, 16). Despite Microsoft's defense, the four allegations stood.

4.2. How Microsoft Was Sanctioned and Regulated

Originally, the agreed-upon remedy was that Microsoft was to be broken up into two companies, one focused on the operating system and one focused on applications and the remaining software aspects of the company. However, shortly after the concluding trial, interviews with Judge Jackson appeared regarding statements he had privately made. The Court of Appeals had found that Judge Jackson had "several ethical precepts in private conversations that were deliberate, repeated, egregious and flagrant." (Evans, Nichols and Schmalensee 2005, 13) As a result, they worried that the public would question the integrity of Jackson and his impartiality in the case. Therefore, the Court of Appeals decided to prohibit Judge Jackson from continuing the case. Furthermore, Jacksons' initial remedy of breaking up Microsoft into different companies was vacated as a result of the comments Jackson had made (Evans, Nichols and Schmalensee 2005, 13).

In addition to turning around Jackson's decision, the Court of Appeals had also turned around the decision that Microsoft had tried to monopolize the market for browsers because there was a lack of evidence for the existence of the market. The market had not been defined properly nor had the barriers to entry been made clear. They also altered the fourth allegation regarding illegal tying because it could also improve innovation and efficiency within the tied product for Microsoft and therefore the claim was not valid. The new judge on the case, Colleen Kollar-Kotelly, arranged for another negotiation due to the findings from the Court of Appeals. In addition, a new Republic Administration had taken office and a different person was appointed in charge of the Antitrust Division. As a result, new remedies were decided upon (Page en Lopatka 2009).

According to regulators, antitrust relief is considered a success when it ends unlawful conduct, avoids a similar event from reoccurring, and removes its uncompetitive consequences. The main obstacle to healthy competition in the market for operating systems was the hindrance of middleware by Microsoft. Therefore, regulators aimed to terminate Microsoft's obstruction of middleware, prevent Microsoft from attempting a similar action in the future, and restoring competition by forcing Microsoft to incorporate middleware (Competitive Impact Statement 2001, 24). First the provisions of the Final Judgment are presented, followed by an explanation of the Technical Committee and finally the Internal Compliance Program.

The provisions of the Final Judgments are based on the three focus points of regulators as stated in the prior paragraph. These are extensively elaborated in the Final Judgment, though made simpler and more comprehensive for the average consumer in the Competitive Impact Statement. Here, the provisions are summarized into five general statements. First, OEMs are required contractual freedom to install software that they desire to sell parallel to Windows. Microsoft can no longer 'bully' OEMs into doing what they want. Second, Microsoft needs to provide identical licensing to the 20 largest PC manufacturers. By doing this, regulators are certain that Microsoft offers equal services to OEMs. Third, Microsoft must allow OEMs to customize computers as they wish without this causing system failure. Fourth, Microsoft is required to disclose information relevant to developing new middleware for Windows. For middleware to thrive, developers from other companies need to have basic knowledge of how they can implement middleware on Windows. Fifth, Microsoft is prohibited from retailing against developers that create software that competes with Microsoft (Competitive Impact Statement 2001, 3-4).

A Technical Committee (TC), consisting of three people was introduced to monitor Microsoft's compliance to the Final Judgment. All three members were required to have extensive background on the relevant technology. One member will be appointed by Microsoft, one by the plaintiffs and once these two are approved by the court, they will together appoint a third member. The United States is

permitted to remove a member if they find that the member does not act appropriately and in accordance with the Final Judgment. Microsoft is required to pay for the expenses made by the TC and provide them with further facilities such as offices. The TC reports to Plaintiffs, investigating claims for them, third parties, and Microsoft's Compliance Officer (explained in the following paragraph). Microsoft must make documents available if the TC wishes to see them as well as provide personnel for interviews if the TC makes a request. The information that the TC obtains from Microsoft is to be disclosed to the public and can only be shared with the Plaintiffs, the court, or Microsoft. The TC will write a summative report every six months about their activities and the evaluation of the firm's business practices (Competitive Impact Statement 2001, 54-59; Final Judgment 2002, 9-13).

In addition to the TC, the Internal Compliance Program was designed to ensure that Microsoft complied with provisions of the Final Judgment. The program demanded that Microsoft appoint an internal Compliance Officer who was responsible for Microsoft's compliance with the Final Judgment. The main task for this officer is to educate Microsoft employees on the precise demands of the Final Judgment and inform new employees on the matter. Furthermore, he is the first person of contact when the TC has questions regarding Microsoft's compliance (Competitive Impact Statement 2001, 59).

In December of 2001, the new terms of agreement were entered, and the term in which Microsoft was required to comply started. By September of 2002, Microsoft had achieved all the adjustments it was required to make following the settlement. The technical committee was selected by early 2003 and from the status reports presented to the district court, it was clear that Microsoft had successfully complied with the five remedies as previously presented. However, the results on market share and competition are less apparent. Although OEMs felt confident in configuring their own middleware knowing they could not be pressurized by Microsoft, the small number of licenses by OEMs for other operating systems did conclude critics in stating that the remedies were not strict enough to improve competition. OEMs still preferred Windows above other operating systems because alternative operating systems were unattractive, did not evoke interest and OEMs lacked incentives for investing resources to critically assess other operating systems. (Evans, Nichols en Schmalensee 2005, 46-50).

4.3. Implications in Antitrust for Regulating Microsoft

The Microsoft Case was complex for regulators because it concerned a new market with complex products and services that antitrust had little experience with. Since antitrust adheres to the Chicago School, consumer welfare (i.e., price) remained central in determining if consumers were harmed. Determining harm in terms of price alone is complex due to predatory pricing. In the short-term consumers can benefit from low prices while eventually being harmed in the long run when the prices rise once there are no competitors in the market. Since Internet Explorer was free, it benefitted consumers in the short run as the internet became more accessible. In the following years of the case,

consumers made a substantial increase in internet usage. Navigator on the other hand had a price tag of $45. Furthermore, the emergence and rapid development of Internet Explorer alone formed an incentive for Netscape to improve its browser. However, it is presumable that in the long run, Microsoft could have increased their prices once competition vanished which would effectively harm consumers directly through price. However, in a sector that is constantly changing this is nearly impossible to predict. Thus, Judge Jackson could not use this argument as proof that consumers were harmed in terms of pricing (Findings of Fact 1999, 204-207).

Judge Jackson does further research on Microsoft's pricing behavior, concluding that Microsoft did not consider the price of other Intel-compatible PC operating systems when it presented Windows 98 on the market. Furthermore, Microsoft did not lower the price for Windows 95 when Windows 98 was dropped. In a competitive market, this would have been the case as the price of a product normally drops when a superior and updated version arrives. In addition, a study from Microsoft carried out in November of 1997 shows that the company could have sold Windows 98 to existing Windows 95 customers as an upgrade for $49 without it being unprofitable, yet they sold it for almost twice as much at $89. Nonetheless, this also does not count as evidence for monopolistic pricing or harming consumers (Findings of Fact 1999, 32-33).

Despite uncertainty regarding price and innovation in the antitrust case, Judge Jackson puts forward examples in which Microsoft did decrease the user-friendliness of Windows for consumers, especially those that did not desire a browser on their Windows PC. OEMs were forced to neglect the preferences of consumers and either couldn't offer Navigator or were forced to offer Navigator and Internet Explorer which came at the price of storage space on a consumer's PC. Windows would automatically launch Internet Explorer even when Navigator was set as the default browser, causing confusion and frustration among consumers. School teachers and parents that feared irresponsible browser usage were left with no choice as removing IE was close to impossible. Jackson argues that the most harm to consumers was carried out indirectly, as Microsoft's competitors were made clear that they were willing to take anti-competitive measures to maintain their dominant market position. Consequently, several innovations that would truly benefit the consumer were not implemented because they were not in line with Microsoft's agendas (Findings of Fact 1999, 204-207).

In addition to price, the Microsoft case proved a difficult one for defining the relevant market(s). The antitrust implications relevant to the case revolved around Windows' multi-sided market platform, not the market for operating systems for Intel-based personal computers as was concluded in the Finding of Facts (1999). Nonetheless, Judge Jackson cannot be blamed for making this mistake as relevant literature on multi-sided market platforms was published after the case. A multi-sided market platform requires two or more groups of agents because the value of the platform to one group is dependent on

the number of agents in the other group. In the Microsoft case, this can be translated to operating systems relying on application developers and end-users for it to obtain value. Jackson also attempted to define the browser market which, according to the Court of Appeals, did not even exist at the time and therefore the claim that Microsoft was monopolizing the browser market was removed. These failures to (properly) define the market are apparent examples of the difficulty for antitrust to regulate the Microsoft case due to its new and complex technological structure (Evans, Nichols and Schmalensee 2005, 37-39).

One of the legal weaknesses of antitrust that was pointed out by this case regarded tying. Tying makes use of the *per-se* rule, which presumes definite inefficiency in tying. However, critics claim that the per se rule fails to observe situations in which tying can in practice have no effect on competition or even promote it. Some believe that attaching Internet Explorer to Windows was rather a form of integration and should not even be sanctioned in the same manner as tying. The Court of Appeals ultimately confirmed that Microsoft was not in violation of tying, concluding that tying should not be considered by antitrust regulators in platform software (Evans, Nichols and Schmalensee 2005, 14-15).

One of the positive findings of the case was that the court managed to acknowledge the unique cost structure of the market. Microsoft's first move in making the Intel-compatible PC available to the average consumer along with the advantages of network effects were realized as the motivation for Microsoft's monopoly position. The high barrier of entry was also considered a result of the nature of the technology sector. Microsoft was only sanctioned for illegally maintaining its monopoly position (Rahman 2020, 95-96).

Determining whether Microsoft or consumers won the case in the long run is not objectively measurable. Relief was more present than the government had intended prior to the settlement and plaintiffs achieved remedies that improved the situation. On the other hand, many will claim that Microsoft got away with the case remedies and should have been split into two companies. The alteration in administrations from Democratic to Republican also very likely played a role to the advantage of Microsoft as the republican administration typically prefers limited regulation. In the end, however, even if the case did not clearly benefit the consumer, it made Microsoft more aware of potential anti-competitive behavior, preventing them from taking similar actions in the future (Evans, Nichols and Schmalensee 2005, 51-53).

4.4. Lessons to Take into Regulating Digital Platform Monopolies

The first important general lesson that can be transferred to the digital platform sector revolves around the price of goods and services in technology. Microsoft offered Internet Explorer free without increasing the price for Windows. As a result, antitrust regulators were unable to claim that price was

harming consumers. Obviously, there was a high probability that Microsoft was partaking in predatory pricing, and that they would have raised their prices once their competitor Navigator was ruled out. Nonetheless, this remains uncertain for regulators at the time because it would require one to predict pricing in the future. Making predictions about the future becomes even more difficult in the technology sector given the rapid development of technology. As a result, focusing on price when regulating antitrust was already complicated twenty years ago, and looking back, it is no surprise that this has become only more complex in the digital platform sector.

The second lesson to be learned is that since the technology sector is constantly and rapidly innovating, remedies need to be applied quickly for them to have an effect. Judge Jackson knew this and thus explicitly took quick action to ensure that the trial would proceed quickly. Unfortunately, his quick decisions resulted in mistakes (in defining the markets for example). However, he could not be blamed as it is impossible to make quick decisions and be accurate when antitrust needs to deal with new market characteristics, products, and services. As a result, in order for regulators to be able to make quick and accurate decisions, the antitrust framework requires a substantial update (Gavil and First 2014, 313).

Third, remedies need to be more precise. Although Microsoft's compliance to the Final Judgment was realized, there was no concrete benchmark ensuring that the remedies actually improved competition. Making remedies more specific is however very difficult since every case is unique. An advisable starting point is that remedies should end conduct that violates the law. Nonetheless, there might be exceptions here that are beneficial and thus requires adjusted remedies. Furthermore, remedies need to be prevention-oriented rather than punishment-oriented. If the remedies are not presented in a manner that prevents firms from making the violation, what is to stop them from doing it again? Nonetheless, this once again requires a new and adjusted approach to antitrust that better fits the implications antitrust regulators experience in the 21st century (Gavil and First 2014, 322-323).

5. Conclusion

This thesis aimed to determine whether or not antitrust is capable of regulating digital platform monopolies in the United States. To answer the question, the thesis makes use of the Microsoft antitrust case that took place from 1998 till 2001. Through analyzing the primary sources from the U.S. Department of Justice accompanied by secondary sources, we learn that regulators were faced with a difficult task, mainly due to the unique and complex structure of modern technology. Defining the market was difficult because of how the operating system Windows and browser Internet Explorer were related to each other. In general, three important lessons can be extracted from the case study. First, prices form an inconclusive criterion for analyzing consumer welfare in the modern age. Internet Explorer was offered free, yet still had anticompetitive outcomes. Second, trials need to move quickly,

else remedies will not have the desired effect in the rapidly changing technology sector. Third, remedies need to be concrete and oriented on prevention versus punishment, otherwise, firms may be tempted to take the same illegal actions in the future.

Twenty years later the situation for antitrust enforcement has become ever more difficult. The products and services offered by digital platform monopolies are free and the unique structure and complex technology behind the platforms make it very difficult for regulators to grasp and stipulate anticompetitive behavior. In addition, the emergence of big data has only increased the societal importance of refraining digital platform monopolies from obtaining too much power.

Based on the findings from relevant literature in the field and the Microsoft antitrust case, I conclude that antitrust is currently not capable of regulating digital platform monopolies in the United States. Although in its foundations antitrust does have the right intentions toward regulating monopolies (maintaining competitive markets, limiting corporate influence, and protecting consumers), it is based on assumptions of the market that are no longer accurate in the 21st century. Technology has become part of almost every aspect of life, developing at a rapid pace and it seems like competition law has not been able to adapt at the same pace. In order for antitrust to level with requirements of the 21st century a radical update needs to take place that redefines consumer welfare, re-evaluates the threat of firm size in terms of market share and societal- and political influence, and finally considers the importance of big data. It seems like the world has reached a point where restructuring is necessary in many places. Just like an energy, educational, and transport transition is on the horizon, so is a transition in antitrust.

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