

Univerzita Karlova v Praze
Fakulta sociálních věd
Institut ekonomických studií



Bakalářská práce

2007

Petra Luňáčková

Univerzita Karlova v Praze
Fakulta sociálních věd
Institut ekonomických studií

Bakalářská práce

The *Microsoft*[®] Case

A defense of the Invisible hand of the computer industry market

Autorka: Petra Luňáčková
Konzultant: Ing. Zdeněk Hrubý, CSc.
Akademický rok: 2006/2007

Prohlášení:

Prohlašuji, že jsem bakalářskou práci vypracovala samostatně a použila pouze uvedené prameny a literaturu.

V Praze dne 30.5.2007

.....

Petra Luňáčková

Ráda bych poděkovala Ing. Zdeňkovi Hrubému, CSc. za vedení mé práce, konzultace a cenné připomínky.

The Microsoft Case

A defense of the Invisible hand of the computer industry market

Abstract:

The Microsoft Case is probably the most famous antitrust trial in the history of protection of free market competition. This paper analyses the main facts, circumstances and consequences concerning the well-known case. Microsoft was accused of violating the Sherman Antitrust Act which is based upon the monopoly theory. Unfortunately, monopoly theory did not undergo as much changes as the computers in recent years did. Furthermore, the paper compares Microsoft with the monopoly theory and shows that there are significant differences. Notwithstanding this fact Microsoft is judged according to it. The justification goes through Microsoft's history and the trial using documents issued by the Court, testimonies and special characteristics of the operating systems market to support the assertion that Microsoft did not abuse its market power. This work defends the abilities of the Invisible hand and shows that so far Microsoft has not done anything that would harm consumers. It is exactly the opposite, consumers have benefited from Microsoft's actions.

Keywords: Microsoft, Windows, antitrust, competition, market, monopoly

Kauza Microsoft

Obrana neviditelné ruky trhu v počítačovém průmyslu

Abstrakt:

Kauza Microsoft je asi nejznámější soudní proces, který řeší obvinění ze zneužití dominantního postavení na trhu. Práce se zabývá hlavními fakty, okolnostmi a následky této kauzy. Microsoft byl obžalován z porušení antitrustového zákona – Sherman Antitrust Act, který vychází z teorie monopolu. Teorie monopolu však během posledních let neprodělala tak zásadní vývoj jako informační technologie. Práce dále porovnává Microsoft s teorií monopolu a poukazuje na významné rozdíly. I přes podstatné nesrovnalosti je Microsoft na základě této teorie souzen. K obraně společnosti Microsoft jsou použity dokumenty vydané soudem, svědectví a především specifické rysy trhu s operačními systémy. Ty mají za cíl podpořit tvrzení, že Microsoft nezneužil své tržní síly. Práce dále hájí vliv neviditelné ruky trhu a ukazuje, že Microsoft doposud neudělal nic, co by poškodilo spotřebitele, ba právě naopak spotřebitelé mají z jeho činnosti prospěch.

Klíčová slova: Microsoft, Windows, antitrust, hospodářská soutěž, trh, monopol

Content:

1. THE MICROSOFT CASE	9
1.1. INTRODUCTION	9
2. THE HISTORY OF MICROSOFT	11
2.1. WINDOWS 1.0	12
2.2. WINDOWS 2.0	13
2.3. WINDOWS 3.0	13
2.4. WINDOWS 95	14
2.5. WINDOWS 98	15
2.6. WINDOWS IN YEAR 2000.....	15
2.7. WINDOWS XP	16
2.8. WINDOWS VISTA	16
2.9. THE FUTURE OF WINDOWS	17
3. THE MONOPOLY THEORY	17
3.1. THE DEFINITION OF MONOPOLY	17
3.2. WHERE DOES MONOPOLY COME FROM?.....	19
3.3. MONOPOLY MAXIMIZES THE PROFIT	21
3.4. MONOPOLY POWER.....	23
3.4.1. <i>The Lerner Index</i>	25
3.4.2. <i>The Concentration Ratio</i>	25
3.4.3. <i>The Herfindahl-Hirschman Index</i>	26
3.5. MONOPOLY AND EFFECTIVENESS.....	27
4. THE LAWSUIT.....	28
4.1. THE TIMELINE	28
4.2. THE ALLEGATIONS.....	30
4.2.1. <i>The Sherman Antitrust Act, 15 U.S.C. §§ 1-2</i>	31
4.3. MARKET DEFINITION	32
4.4. THE MARKET FOR OSS AND ITS CHARACTERISTIC FEATURES.....	33
4.4.1. <i>System effects</i>	34
4.4.2. <i>Network effects</i>	34
4.4.3. <i>“Winner takes most”</i>	34
4.4.4. <i>Applications barrier to entry</i>	35
4.4.5. <i>Microsoft perceives its market position in the future as insecure</i>	37
4.4.6. <i>Microsoft’s power</i>	38
4.5. WHAT MICROSOFT DID?	40
4.5.1. <i>The price of Windows</i>	40
4.5.2. <i>Internet Explorer</i>	42
4.5.3. <i>Microsoft’s investment in Internet Explorer</i>	43
4.5.4. <i>Internet access providers</i>	44
4.5.5. <i>Tying of IE with Windows</i>	45
4.5.6. <i>Pricing IE at zero</i>	47
5. MICROSOFT’S DEFENSE	50
5.1. HOW BADLY WAS MICROSOFT AFFECTED BY THE TRIAL?	51
6. FINAL JUDGMENT.....	53
6.1. SO ORDERED COLLEEN KOLLAR-KOTELLY	54
6.1.1. <i>Prohibited Conduct</i>	54
6.1.2. <i>Compliance and Enforcement Procedures</i>	55
6.1.3. <i>Termination of the Final Judgment</i>	56
7. CONCLUSION.....	56

8. BIBLIOGRAPHY	60
9. GLOSSARY	63
10. APPENDIX – SHERMAN ANTITRUST ACT, 15 U.S.C.....	65
11. THESIS	68

The **Microsoft**[®] Case

A defense of the Invisible hand of the computer industry market

“In a world without walls and fences, who needs windows and gates?”

Anonym

1.1. Introduction

“Microsoft Corporation is the worldwide leader in software, services and solutions that help people and businesses realize their full potential.”^[1] It is obvious that Microsoft could be an issue for several books. I am convinced that almost everybody would find it interesting. No matter whether you are a lawyer, an engineer, a teacher or an economist, Microsoft deserves your attention for a lot of reasons. To name one of them – it helped to create today’s globalized world – it symbolizes the new IT (information technology) era. For this reason I have chosen Microsoft Corporation to be my bachelor topic. It is almost impossible to cover whole Microsoft and because I am becoming an economist I will deal with the well-known Microsoft Case from the economic point of view and with related problems such as monopoly theory that served during the trial and with a lot of specific features concerning software markets.

I would like to show that Microsoft differs. You can ask me why I find it so different. Microsoft could be just another economic agent maximizing its profits and minimizing the costs. The reasons follow and I will discuss them in more detail in the next chapters. Let’s mention the most important of them:

1. High-technology is an industry with significant network effects. Network effects define crucial features of the market structure that have to be taken into account when defining competitive and anticompetitive actions.
2. Systems effects – thanks to these effects the value of a product depends on the complementary components. One can hardly imagine a market with greater importance of systems effects than computer both software and hardware market.
3. High-technology is a market which does not fit the classic monopoly theory build before, but it is judged according to it. The development proceeds following rapid technological changes and the velocity of changes was never a variable or an assumption for the monopoly theory.
4. Microsoft Corporation is a giant company and has a worldwide influence including some political power. It is extremely difficult to include this kind of characteristic in an economic model.

Truth to be told Microsoft is a bit controversial company, loved and hated at the same time. First of all, on May 18, 1998, the United States Department of Justice and the Attorneys General of 20 States and District of Columbia sued Microsoft for abusing monopoly power in its handling of operation system (OS) sales and web browser sales. The crucial question of the trial was whether Microsoft was allowed to bundle its web browser Internet Explorer® (IE) with its Microsoft Windows® operating system. Did Microsoft violate the antitrust law? Another quite similar trial took place in Europe. The European Union Microsoft Antitrust Case is a case brought by the European Union against Microsoft for alleged antitrust abuse. Firstly, it was about Microsoft's licensing practices but later the bundling became an issue again. This time Microsoft was sued for bundling Microsoft Windows operating system and Windows Media Player®.

Second contradictory view follows. It is the influence of government on innovations against the Invisible hand. Free market economy against state interventions – a problem as old as economy itself. Markets are not infallible. There is no doubt about it, in certain cases markets fail, but is it this case?

Third, I am not sure whether to write consumers against Microsoft or consumers for Microsoft. Anyway, Microsoft's problem is supposed to concern consumers. Have they benefited from its actions rather than been harmed by them?

Fourth, it is Microsoft against its competitors Netscape at first, then Sun Microsystems, Apple, Linux, and others. The competitors blame high barriers to entry, applications barrier, and marginal costs close to zero for unfair competition.

When taken into consideration all the possible problems and features mentioned above, I would like to show that monopoly theory deserves an “update”, at least when dealing with the markets with network and systems effects. The application of antitrust law in this kind of industry should be more careful, keeping in mind that the economic analysis of this problem is relatively new.

My defense of the Invisible hand of the computer industry market has the following structure: Chapter 2 presents the foundation of Microsoft and all versions of Windows since 1985 together with Microsoft’s competitors that were relevant in the software market history. Chapter 3 covers the microeconomic theory of monopoly which is consequently compared with Microsoft. Chapter 4 presents main allegations and Microsoft’s actions that forewent the trial. The arguments concerning IE and specific features of the software market are discussed as well. Chapter 5 lists the arguments on behalf of Microsoft and chapter 6 deals with the Final Judgment. Chapter 7 concludes the Microsoft Case.

2. The History of **Microsoft**[®]

To understand the Microsoft Case we have to learn some historical facts because every issue has its causation. The evolution of Microsoft determined its future problems as well as the future success. Microsoft Corporation has roughly seventy-one thousands employees but ironically enough, for everybody is represented only by one man, Bill Gates, the chairman of Microsoft Corporation.



William Henry Gates III was born on October 28, 1955, into a family that was always successful in business. The Gates family lived in Seattle, Washington. When Gates studied in Lakeside Prep School, a private school known for its academic environment, he got into computers fulltime. He and his schoolmates including Paul Allen studied manuals, explored the system and sought the answers till they were able to write programs and hack the system. It sounds ridiculous in these days but they had limited

computer time and in order to get rid of the limits they learned to alter and crash the files. Consequently, they were banned from the computers.

Soon afterwards Computer Center Corporation decided to hire the students to find bugs and discover vulnerabilities in the computer system. In return for their help they were given unlimited computer time. Gates is quoted as saying: “It was when we got free time at C-cubed (Computer Center Corporation) that we really got into computers. I mean then I became hardcore. It was day and night.” [Wallace and Erickson, p. 30] After that they were hired by Information Sciences Inc. to write a payroll program. The time went by and Gates’s skills and computer knowledge were improving. Gates managed to make some money by computer programming. Short after that he and Paul Allen started to think seriously about forming their software company.

In 1973 Bill Gates left for Harvard University but stayed in touch with Paul Allen. Together they wrote a code called BASIC that could be used on the first non-commercial computer named Altair. They managed to sell the rights to BASIC to Micro Instrumentation and Telemetry Systems, the makers of the Altair. Within a year Bill Gates had left Harvard and Microsoft was founded in 1975.

On November 10, 1983, Microsoft announced Microsoft Windows, an extension of the MS-DOS operating system that would provide graphical operating environment for personal computer (PC) users. A new era has begun. In the early years of Microsoft, Gates and Allen had a science fiction vision “A PC on every desk and in every home”.^[2] Thanks to them the vision has become true. Windows was originally going to be called Interface Manager, but Ronald Hanson, the head of marketing at Microsoft, convinced the company to rename it.

2.1. Windows 1.0

The first independent version of Microsoft Windows, version 1.0, was released on November 20, 1985. It provided new software environment and the mouse support was introduced. No more typing commands at the C prompt, just move the mouse to point and click. Version 1.0 was not complete operating system, but rather extended MS-DOS and it also shared some of its problems. It also suffered due to legal challenges by Apple that limited some functions. Apple claimed to own the rights to “titled” windows and trash can. Later, Microsoft got rid of this problem by signing a licensing agreement. Windows 1.0 was more a toy than a tool for business users.

The home computer market has just exploded and someone needed to make software for it. Microsoft was not the only one to know that. The competition was tough. The first successful operating system bundled with International Business Machines Corporation (IBM) computers was MS-DOS followed by Top View in February 1985 without any graphical user interface (GUI). IBM promised that the future version of Top View would have a GUI but it was never done. Bill Gates realized the possibilities of user-friendly GUI. He had seen Apple's Lisa, the first home computer with GUI and later even better Apple Macintosh computer. Microsoft Windows was new and faced competition from IBM's own Top View. Other competitor was VisiCorp's short-lived VisiOn released in October 1983. It was the first official PC-based GUI. Another rival named Graphics Environment Manager, GEM for short, was released by Digital Research in early 1985. They both suffered from similar deficiencies. The most important problem was that they lacked support of all important third-party developers. With no support, no programs were written and nobody had a reason to buy them. In January 1987 the first Windows compatible program called Aldus PageMaker 1.0 was released. It was a desktop-publishing program for PC. This convinced and motivated Microsoft and led to further development of Windows.

2.2. Windows 2.0

Microsoft Windows, version 2.0, was introduced on December 9, 1987. This improved version made Windows based computers look more like a Mac. With the addition of icons and overlapping windows, Windows became a great environment for development of new graphical applications such as Excel, Word for Windows and others. Apple Computer noticed the similarity and sued Microsoft alleging that they had broken the 1985 licensing agreement. This is when the lawsuits became part of computer business. After the four-year court case Microsoft won. The Court said that the licensing agreement gave Microsoft the rights to use all but nine of the copyrights and Microsoft later convinced the courts that the remaining copyrights should not be covered by the copyright law at all.

2.3. Windows 3.0

New version was released in May 1990 and achieved a significant success. Windows 3.0 offered improved performance and advanced graphics and had more

powerful user interface. Independent software vendors started developing Windows applications. Thanks to new applications Microsoft sold more than 10 million copies of Windows 3.0 and has become a serious competitor to the Apple Macintosh.

Two years later Windows 3.0 was followed by Windows NT 3.1 released in April 1992. According to Microsoft, NT stands for New Technology, and provided significant improvements. Windows NT was the first Windows operating system to combine support of high-end, client/server business applications with the industry's leading personal productivity applications. Versions Workgroups and Workstations were released a year later. Windows 3.X became the number one in operating system installed in PC until 1997, when Windows 95 took over.

Even at this time it was unclear who would win so called "Desktop war". During 1980s Microsoft and IBM had cooperated with each other and developed OS/2 as a successor to DOS. They had access to each other's code. In early 1990s disagreements appeared in the relationship of Microsoft and IBM. Microsoft gained insight into the situation and caught an opportunity that it had in Windows. It wanted to focus on further development of Windows, contrary to IBM which wanted to improve OS/2. Firstly, they agreed to divide the research, but soon afterwards their relationship terminated and Microsoft renamed its (yet unreleased) OS/2 3.0 to Windows NT. Both had the right to use the technology developed till the end of their agreement. Despite the fact that IBM knew every code developed by Microsoft, it was not able to gain market share that would be big enough and after a while the Windows application programming interface (API) became standard for consumers' software.

2.4. Windows 95

Windows 95 was released on August 24, 1995 and caused a buying fever. It was the most user-friendly consumer oriented version of an operating system with codename Chicago. A separate DOS was no longer required and it offered a great degree of backward compatibility and greater stability and security. Microsoft's market share was increasing after the release of Windows 95. The reason for this may be that consumers did not have a cheaper alternative even though IBM continued to market OS/2. Why did OS/2 failed? It is hard to tell. IBM lost access to Microsoft's code and rumors say that they did not want to invest in research. OS/2 also lacked support of new equipment. IBM tried to blame

Microsoft for unfair business practice during the United States v. Microsoft Case but the OS/2 non-success was mostly their fault.

2.5. Windows 98

Windows 98 was released on June 25, 1998, as an upgrade to Windows 95. Described by Microsoft as an operating system that “Works Better, Plays Better.”^[3] Windows 98 was also the first version designed especially for consumers. This version was generally more reliable and stable than the others. Support of Universal Serial Bus (USB) peripherals and support of reading DVD discs was probably the most important feature of this version. Windows 98 included Internet browser Internet Explorer 4.0 and that is the point where the court case United States v. Microsoft began. Microsoft was (generally speaking, for the legal allegations see chapter 4.2.) accused of abusing its market power to distort competition in the PC operating systems market in order to increase sales of its other products.

In 1999 the second edition of Windows 98 was released, abbreviated as Windows 98 SE. The new version allowed sharing single Internet connection and it also enhanced compatibility with third-party developers. Internet Explorer 5.0 was integrated and the related features were improved. It is said to be the most stable release of Windows.

2.6. Windows in year 2000

This year two versions of Windows were released. Windows Millennium Edition, usually called Windows Me, was designed for home computer users. It introduced the first version of Restore System that is able to retrieve the computer to the state before a failure occurred. It was an upgrade to Windows 98 SE and at the same time the last OS based on the Windows 95 code base. Windows Me was not perceived as a unique operating system. It was a quick project between Windows 98 and Windows XP. It was widely criticized and sometimes even called “Mistake edition”.

Microsoft’s future operating systems were based on Windows NT. First of them, Windows 2000, was released in several versions (Windows 2000 Professional, Windows 2000 Server and others). Since Windows 2000 Microsoft offered automatic software updates over the Internet. A number of Windows 98 features were incorporated for example improved Device Manager, Windows Media Player and DirectX that allowed users to play modern games on the NT kernel. It was designed mainly for business

desktops and laptops and for simplified hardware installation due to “Plug and Play” hardware.

2.7. Windows XP

Windows XP was released in October 2001 and it has been available in many versions. Nowadays, the most popular and widely used is Windows XP Home Edition (N) and Windows XP Professional Edition (N). “N” stands for the version without default installation of Windows Media Player, as ordered by the ruling in The European Union Microsoft Antitrust Case. Windows XP merged the Windows NT/2000 and Windows 3.1/95/98/Me lines. (The reason is that Microsoft has taken two parallel routes in operating systems, one route has been the home user and the other has been the professional IT user. The dual route has generally led to the home versions with more “eye candy” and less functions, and professional versions with less “eye candy” and better networking and security.)

Windows XP was given a codename Whistler, but it could be also called “work and enjoy”. It offers improved performance and simplification, such as: easy switching between users on the same computer, enhanced Windows Media Player, Remote Assistance, better System Restore, Network Setup Wizard and Windows Messenger for built-in instant messaging. According to Microsoft, the “XP” stands for experience, symbolizing the long development of Windows OS. Windows XP is the longest ongoing version of Windows that has ever been released. It took six years till the next Windows operating system was introduced in 2007.

2.8. Windows Vista

Windows Vista is the latest version of Windows and was released on January 30, 2007. It was known by codename Longhorn and the catchword says: “Minimize Worry, Maximize Wow.” The primary objective of Windows Vista is to improve security and due to that the completion was postponed several times. It is said to be the evolutionary release with hundreds of new features making the use of PC easier, safer, faster and more entertaining. It includes Windows Internet Explorer 7 (IE7) that underwent significant changes. IE7 runs in isolation from other applications in the OS, the aim is to protect the computer. There is new GUI named Windows Aero (Authentic, Energetic, Reflective, and Open) offering support of 3D graphics, translucency effects and window animations.

Among others, Windows Vista grants finding folders, documents etc. faster due to Instant Search, improved startup and sleep performance, possibility to organize the files in your own way, Family Safety Settings and a brand new Windows Media Player 11. To avoid bugs Windows Vista released more than 5 million beta versions that were tested. The feedback from beta testers was used to adapt Vista to consumers' wishes.

2.9. The future of Windows

Little is known about Microsoft's future plans, but the next release after Windows Vista is supposed to be Windows with codename Vienna (formerly called Blackcomb). If Windows Vista is an evolutionary release then Windows Vienna is intended to be a revolutionary release. It is interesting that the codenames used by Microsoft originated in Canada. Whistler Blackcomb is a wonderful ski resort area located in Whistler, British Columbia and Longhorn is a popular saloon in this ski resort.

Perhaps you are asking why I devoted so much time to Microsoft's history. I wanted to show that Microsoft's history is full of expensive and long-lasting research, improvements, and innovations. The pace of the software industry development will turn out to be crucial during the antitrust case.

3. The Monopoly Theory

"I don't know what a monopoly is until someone tells me."

Steven Ballmer, CEO, Microsoft

3.1. The definition of monopoly

The plaintiffs accused Microsoft Corporation of abusing monopoly power. If you want to abuse monopoly power, you have to have it. We will start with the brief definition of monopoly and perfect competition in order to see whether it fits Microsoft. Generally, there are two possible extreme situations in the market. We will not discuss oligopoly market because it is not related to Microsoft. In a nutshell, perfect competition is usually defined (according to Koch, chapter 2, p. 17):

1. A large number of firms exist and none of them has a noticeable influence upon market price or quantity. Equilibrium quantity and equilibrium price are determined by the combined interaction of supply and demand. A representative firm considers the price as a given. It has no market power at all. Its demand curve is horizontal and perfectly elastic at the equilibrium price.
2. Each seller produces an identical product.
3. Everyone has correct information about all relevant aspects of the market, such as the prices charged by every firm.
4. In the long run (LR) there are no barriers to entry or to exit the market and no restraints in the input and output markets or amount produced. Generally, resources are perfectly mobile.
5. Every firm maximizes its profits and the market is Pareto effective (nobody can be better off without someone else getting worse off).

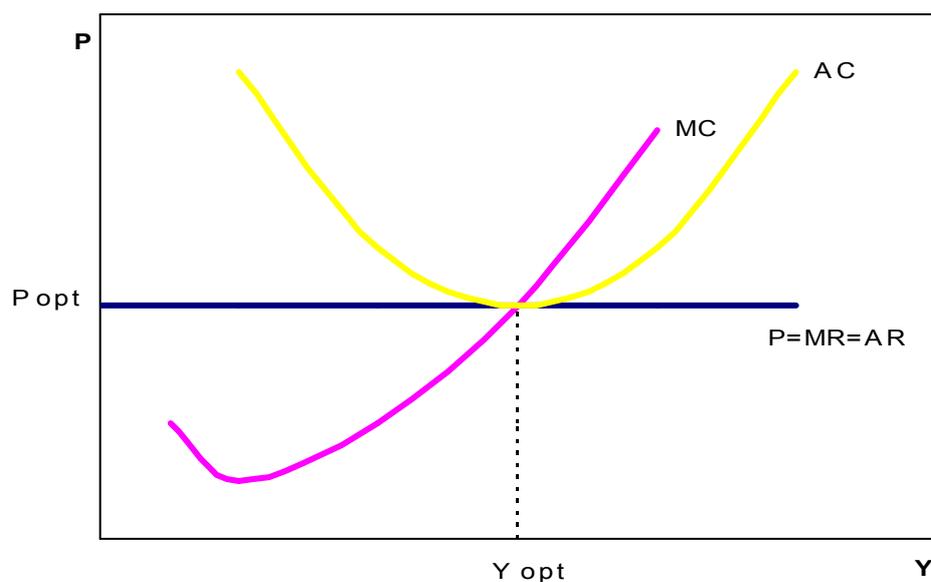


Figure 1: Perfect competition in the LR.

(Source: Varian, chapter 22, p.389)

Contrary to the perfect competition mentioned above, monopoly possesses a significant market power and is the only seller in a particular market. More precise definition of monopoly follows (according to Koch, chapter 2, p. 22):

1. The whole industry consists of a single firm/seller – monopoly that has a complete control over the supply. Monopoly decides which price to set facing the downward-sloping demand curve for its product.
2. There are no close substitutes for monopolist's product.
3. There are substantial barriers to entry the market.
4. Monopoly maximizes its profits and is usually an ineffective market structure.

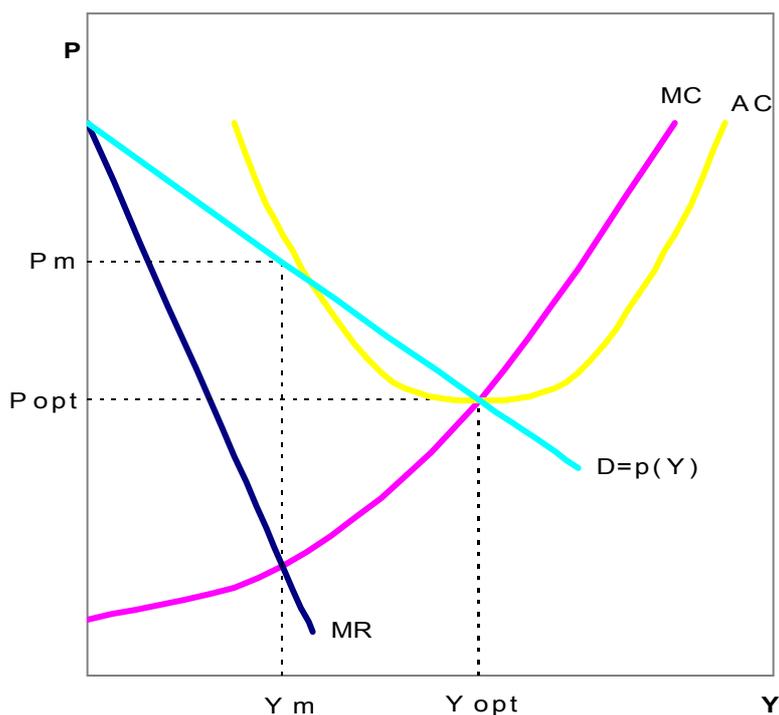


Figure 2: Monopolist's equilibrium: $MC = MR$. P_m and Y_m is the profit maximizing combination for monopoly. (Source: Varian, chapter 22, p. 412)

3.2. Where does monopoly come from?

At the first sight, monopoly seems to be a non-invited player. Where does it come from? There are several reasons. It could be simply the first one to run the business; it survived the hard beginning and established itself as a well-perceived firm. And now it exists for “historical” reasons. The firm can also control significant, scarce resource or enjoy a unique geographic position that creates the monopoly power as well. There are also industries regulated by the state. Government issues a limited number of licenses and concessions. This represents the market power.

Or you can own a patent that gives you the market power. A patent could be called a monopoly with timeout. The existence of patent law is out of discussion, but governments are uncertain about how long a patent should be valid. A patent for an invention is a grant of a property right to the inventor. It has an important impact because it gives the firms an incentive for research and development (R&D), the thing that among others keeps economy growing. “In general, the term of a new utility patent is 20 years. U.S. utility and plant patents filed before June 1995 are valid for 17 years from the date of acceptance and patents filed after this date are valid for 20 years from the date of filing. Design patents are valid for 14 years. Most other countries also have the 20 year rule for utility and plant patents. During this period of time the patent owner has exclusive rights to use the patent.”^[4]

The patents are here to decrease the effect known as “an inability to fully exploit the advantage of an invention”. New knowledge or an invention has the character of positive externality. Samuelson states that the inventor gains only about one third of the value of his invention. Two thirds of it go to society and increase its welfare. That creates a very small incentive to invest in R&D. One would expect that if you can get only one third of the value of your invention, R&D will be heavily underfinanced. This effect explains why big corporations incline more to R&D because in their case the incentive is stronger. If you control significant part of the market you are more likely to receive more than one third of the value of your invention. [Samuelson, pp. 614-615]

The reasons listed above are called “legal and institutional factors” together with “technological factors”. Alternatively, several firms can make a deal and create a cartel (an illegal market structure). That is another tempting way how to gain market power. But the most important reasons for monopoly existence are high costs to overcome the barriers to entry – capital requirements and scale economies. The combination of these enables the existence of “natural” monopoly. Monopoly power cannot exist in the LR except the situation when it is supported and protected by barriers to entry. It enables the firm to earn pure profits. Barriers usually result from reasons mentioned above and from demand conditions, including product differentiation and price elasticity.

Economies of scale or returns to scale refer to the relationship of average costs (AC) per unit of production to the scale of the firm. Economies of scales appear in the LR when the average cost curve has a negative slope. Continually falling the long run average costs (LRAC) and the long run marginal costs (LRMC) are strong incentive to expand the output because it brings lower unit costs. One reason for declining average unit cost is

that natural monopoly markets are characterized by a high ratio of fixed costs to variable costs. The LR time period is emphasized because all inputs should be variable to achieve returns to scale. Surprisingly, scale economies can become a barrier to entry and not an incentive. New firm usually enters the market with low output, therefore if the typical “average cost per unit of output curve” is U-shaped, then low levels of output mean high average cost per unit of production for the entrant. However returns to scale are mostly considered to be an advantage. “One school of thought, typified by Joe S. Bain, contends that a barrier to entry is simply any advantage held by existing firm over those firms that might potentially produce in a given market” [Koch, p. 78]

What if two firms attempt to merge in order to reach economies of scale? Will the advantage of low average costs outweigh the bigger market power they gain? The authorities usually say no.

As we can see monopoly is either caused by the state or “should be solved or regulated by the state”. I used the word “should”, let’s say public opinion demands it and for now we will leave this normative statement behind. More important is that it undermines Adam Smith’s well known Invisible hand which is supposed to guide market automatically to equilibrium where the allocation of scarce resources is the most effective. The Classics completely relied on the market and this theory had to fail to prove to world that from time to time markets do fail. The list of market failures is short but important. Governments all over the world usually correct negative externalities, supply public goods, try to avoid moral hazard and adverse selection, and deal with monopolies. All of these failures except for monopoly are prevalingly caused by imperfectly defined ownership’s rights. Monopoly again turns out to be special.

3.3. Monopoly maximizes the profit

All firms, whether they have market power or not, maximize their profit by following the same general principle. The principle is the same all the time but the demand curve is not. The aim is to produce the output at which marginal revenue (MR) equals marginal costs (MC). It has been already said that monopoly sets the price of its product facing the downward-sloping demand curve. It has no supply curve, the firm is the only supplier, thus supply curve makes no sense. The quantity produced is decided according to the demand curve and marginal costs. The goal is to determine the price-quantity

combination along the downward-sloping demand curve that maximizes profit. To be more exact:

Microeconomic way of maximizing the profit (according to the microeconomics lectures from Charles University) follows: Every firm compares its total revenues (TR) and total costs (TC). Let's use standard microeconomic abbreviations for the variables:

Π_m stands for monopoly's profit

Y is production given by the production function

P is price of one unit of output

Z_i is i-input

W_i is price of unit of i-input (assumed to be constant)

Cost function: $TC(W, Y) = \sum W_i * Z_i$

Revenue function: $TR(Y) = P(Y) * Y$

When maximizing the profit we are looking for a solution of:

$$\max \Pi_m = TR - TC = P(Y) * Y - C(W, Y)$$

First order condition (FOC): $\partial \Pi_m / \partial Y = 0$ that leads to a general principle:

$$MC_m = MR_m$$

which is an optimum point. So far there is no difference between monopoly and perfect competition. The contrast comes in the next step. According to the intersection of the MC curve and the MR curve, the monopolist sets the amount of goods which it plans to produce Q_m . The P_m is set consequently corresponding to Q_m and the demand curve. Second order condition (SOC) has to be also fulfilled:

$$\partial^2 \Pi_m / \partial Y^2 < 0$$

Differentiating we come to: $\partial MR / \partial Y < \partial MC / \partial Y$

It says that the MC must grow faster (or decrease slower) than the MR. From the mathematical point of view, in order to maximize the function, we need first derivative

to equal zero. That is the way to find local maximum(s) or minimum(s) and then we need second derivative to be negative in order to assure that the local extreme is maximum of given function.

The FOC can be rewritten using price elasticity:

$$\partial TR(Y)/\partial Y = MR = P + Y \cdot \partial P / \partial Y = P \cdot (1 + Y/P \cdot \partial P / \partial Y) = P \cdot (1 + 1/\epsilon)$$

$$MC = P \cdot (1 + 1/\epsilon)$$

ϵ is defined as price elasticity which is negative because generally demand decreases when price increases. For $\epsilon = -\infty$ is $1/\epsilon = 0$ and we get the condition that is valid for perfect competition:

$$MR = P = MC.$$

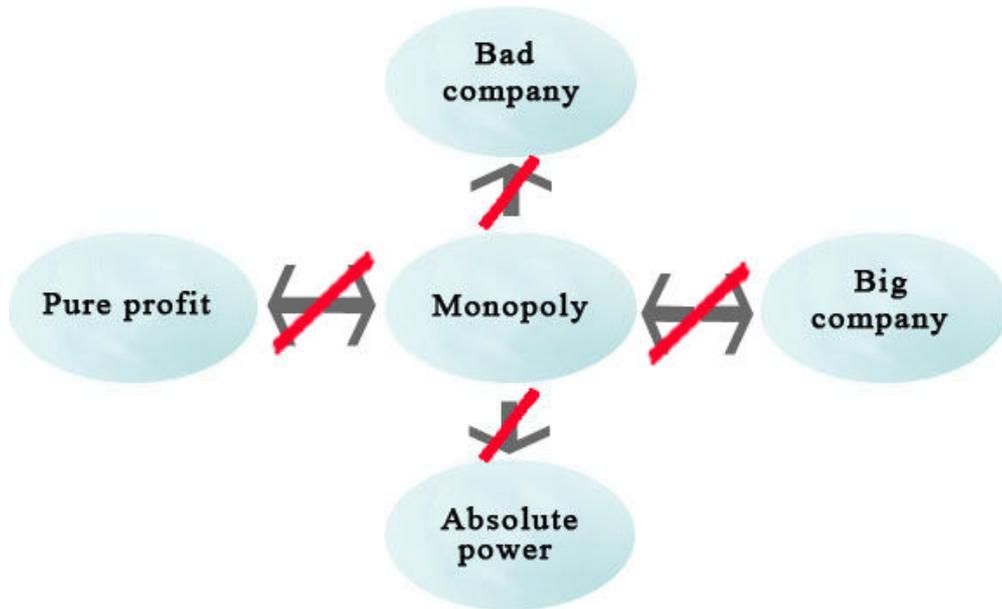
Back to monopoly, negative MR does not make economic sense, so monopolist is interested only in the elastic part of demand. For the downward-sloping demand it means that the price will always “lie” above $MR = MC$ point. It implies that the monopoly price will be always higher than the MC or equal.

The important difference is that perfectly competitive markets consider price as given. It means that marginal revenue simply equals the price and according to the FOC price equals marginal costs. There is no space for pure profit in the LR and no dead weight loss (DWL). Consumer’s surplus as well as producer’s surplus is maximized and the situation is Pareto effective.

3.4. Monopoly power

Sometimes people think that the giant corporations possess the power to do whatever they want. That is not true. However, it is quite difficult to explain that when you do not know anything about economics. Just to be clear; let’s call these statements “The Presumptions of Innocence” (that are definitely not employed in Microsoft’s Case):

“The Presumptions of Innocence”



Monopoly does not mean big. Big does not mean monopoly. Monopoly does not mean absolute power. Monopoly does not guarantee pure profit. Pure profit in the short run (SR) does not mean monopoly power. Monopoly does not mean a bad company and most of all monopoly does not mean a monopoly forever because an unexpected substitute or technological progress can always appear. Usually, it is only a question of time.

According to the theory the worst thing about monopoly is its power. Monopoly power is an ability to influence the price or quantity; but some firms have more power than the others. There are several – theoretical – ways how to measure the power of monopoly. Market/monopoly power has many dimensions so the indices that are used to describe it are only approximate. In spite of this fact it is worth mentioning them. The indices are limited by the monopoly theory itself, mostly by its static view. What should we measure: actual power or potential power? Some of the indices are not operational in their nature and therefore cannot be actually utilized. However, the indices can be a first signal about the situation in the market, on the other hand they do not show the degree of competition. The most common ones are described in the next subchapters.

3.4.1. The Lerner Index

One of the best known indices is the Lerner Index defined as:

$$I = (\text{Price} - \text{Marginal Cost}) / \text{Price}$$

For perfect competition, equilibrium is reached when the price equals the marginal costs, in this case Lerner Index equals zero. When the price is higher than the marginal costs, the index indicates existence of monopoly power and varies between zero and one. The closer to one, the more monopoly power the firm possesses. The Lerner Index can be negative if the firm produces too much and it is equal to the reciprocal value of the coefficient of price elasticity of demand when the firm is maximizing profit and is in equilibrium.

$$MR = P (1 + 1/\varepsilon)$$

where ε is the coefficient of price elasticity of demand. Applying some mathematics we get:

$$(P - MC) / P = 1 / |\varepsilon|$$

This equation measures the actual conduct and does not measure the potential monopoly behavior. Moreover the potential power is relevant information. The ability of the Lerner Index to give evidence is little due to its static view and problematic way how to measure the real marginal costs. [Koch, pp. 52-53]

3.4.2. The Concentration Ratio

In addition, there is another indicator – the Concentration Ratio (CR). The four firm CR is the most popular one. It measures the proportionate share of the market held by four largest firms. The formula for the CR follows:

$$CR_K = K_{\text{firms}} / Y_{\text{industry}}$$

where K stands for the number of the biggest firms in the industry (number four is the most common one) and Y_{industry} is the overall output of the industry. [Koch, pp 54-55]

The higher the concentration ratio is, the greater monopoly power is claimed to exist in the industry. This idea have both theoretical and empirical basis, but it describes

the market as a whole omitting the individual firm. In fact it disguises the character of an individual firm. It is not reliable guide, but it measures the potential monopoly power considering the entire market. Foreign competitors are not taken into account.

3.4.3. The Herfindahl-Hirschman Index

Another index was used to make a decision whether to allow a merger – the degree of concentration in the industry. It is called Herfindahl-Hirschman Index (HHI) and it takes into account the market share of all the firms in the industry. The HHI is defined as the sum of squares of each firm's market share:

$$HHI = \sum (s_i)^2$$

where s_i is the market share of the i^{th} firm in percent and i goes from one to n , where n is the number of firms in the industry. The lower the HHI is, the more competitive the market is. The HHI varies from zero for perfectly competitive industry to 10 000 for pure monopoly. Compared to the CR the HHI is better for the competition analysis. However, the HHI rises and falls with the definition of the market. The definition of the market for antitrust purposes is crucial for the determination of liability. [Tresch, pp. 491-492]

I showed and described the methods how to measure the monopoly power in order to demonstrate how uncertain these methods are. It is at least very problematic to measure monopoly power, but Microsoft has automatically been assumed to have a significant market power.

I think that it worth mentioning that: “Since 1968 US merger guidelines used the four firm concentration ratio and were highly criticized for that. In 1982 the U.S. Department of Justice (DOJ) issued new merger guidelines partially based on the HHI because it reflects the whole market.” [Griffiths and Wall, p. 108] However, the HHI cannot tell anything about conglomerate mergers because market concentration does not increase in this case. Thus, from the point of view of DOJ, non-horizontal mergers remain uncertain. This might be a problem because mergers in the USA are often of the conglomerate type, probably just because of the U.S. antitrust policy. Hence, it creates kind of vicious circle. In fact, DOJ judges conglomerate mergers on a different basis. The only important issue is the lessening of potential competition. “This is judged according to the ease of entry into the industry, the likelihood of fixing prices through tacit

collusion, financial health of the firms, the significance of foreign competition, and the probable impact of the merger on innovation. DOJ is also willing to consider arguments that a merger increases production efficiency by exploiting economies of scale. The courts had never before accepted economies of scale arguments as a basis for justifying a merger.” [Tresch, p. 492]

3.5. Monopoly and effectiveness

Let’s assume for now that monopoly is a “bad” company. People tend to think so because most of them consume some of monopolist’s products and because mass media claim that. It is a good example of the way the normative statements are used, but the question of justice does not belong to economy. Everything depends on the point of view, whether you are a consumer or a producer. If you own or run a monopoly, it is definitely something like a gold-mine. But someone would have to decide whose welfare worth more. The proof based on market economy theory is surely a better justification.

We have already shown that measurement of the market power is an extremely difficult task. Monopoly is not an uninvited player because it – theoretically – harms consumers, but because it is an ineffective market structure. Simply, it is not Pareto effective, as proves the Figure 3 hereunder. The red area shows the net loss, economists call it “dead weight loss” (DWL). It equals the lost profit that no one receives.

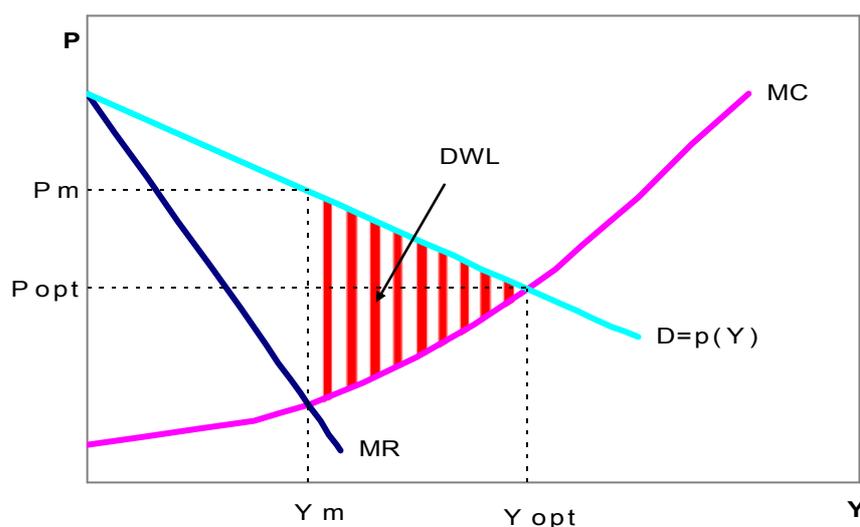


Figure 3: The ineffectiveness of monopoly – “dead weight loss”.

(Source: Varian, chapter 22, p. 417)

Monopoly's market is characterized by the downward sloping demand that has a significant negative effect – the price goes down as the output increases. The monopolist could produce an extra unit, but it would decrease the price of all units produced before and therefore the overall profit would decrease. The loss of profit would be larger than the price/money received for the last unit. Price discrimination theory and practice deal with this issue quite successfully. Widely used is the price discrimination of the second type represented by bulk discount. Theoretically, an extreme statement says that the Pareto ineffectiveness of monopoly is not caused by the monopoly itself, but is caused by its inability to enforce perfect discrimination. And suddenly the core problem shifts from ineffectiveness to unfair redistribution of welfare. We cannot show logically that the welfare is increased or even that welfare will not decline when we selectively eliminate monopoly power.

However, monopoly has also supporters – the most famous one is probably Joseph Schumpeter known for his theory of “creative destruction”. Schumpeter advocates monopoly and claims that innovations and technological changes descend from big corporations rather than small firms under the conditions of perfect competition. For Schumpeter monopolies are the engines of economic growth because they tend to invest in R&D more than smaller companies. [Samuelson, pp. 614-615]

4. The Lawsuit

4.1. The Timeline

So far, it was the theory which we discussed the most, now let's have a look at the lawsuit. It takes a long time to get to know all the key problems and events, so this chapter begins with the trial's timeline, which could ease the understanding of Microsoft's Case. The “problem” consists of many issues, and the details will be given in the next chapters to obtain a complex view. Key facts and dates follow:

From early 1990s the U.S. Department of Justice (DOJ) focused on Microsoft's marketing practices. In July 1994 Microsoft signed a consent decree and obliged not to use its dominance in OS market to distort competition. In August 1995 U.S. District Court Judge, Thomas Penfield Jackson, finally approved the decree. The 1995 consent decree imposes two restrictions, one horizontal and one vertical. According to the horizontal restriction Microsoft is not allowed to use zero marginal costs pricing but on the other hand

it can use quantity discount and $MC = P = 0$ is a special case of quantity discount. The lowest possible price remains unclear. The vertical restriction forbids contractual tying but allows expanding the functionality of Microsoft's products (technological tying). [Economides, p. 8] In August 1997 Microsoft was accused of anticompetitive action due to the agreement with Apple concerning IE becoming Apple's default browser for five years. Shortly after in October 1997 DOJ charged Microsoft with alleged violation of the 1995 consent decree. The complaint claimed that IE, bundled to Windows 95, broke the consent decree.

The Microsoft court case began on May 18, 1998. The plaintiffs (DOJ and the Attorneys General of 20 States and District of Columbia) alleged that Microsoft abused its monopoly power in OS, which is illegal under paragraph 2 of the Sherman Antitrust Act (and consequently harmed consumers, markets and possibly Netscape). Then hearing of the accused and examination of the witnesses took place. On November 5, 1999 Judge Thomas Penfield Jackson issued his initial "Findings of Fact", which stated that Microsoft is a dominant of the OS market and that it had taken actions to preserve its monopoly position.

"Findings of Fact" (FOF) is over two hundred pages long document that summarizes major facts concerning Microsoft's Case. In law, a question of fact is a question which must be answered by reference to facts and evidence, and inferences arising from those facts. The answer to the question of fact i.e. "finding of fact" which is usually dependent on particular circumstances or factual situations.

Then on April 3, 2000 the Judge issued Conclusions of Law (COL) and ruled that the titan of high technology violated antitrust law. The Court concluded that Microsoft had maintained its monopoly power by anticompetitive means, attempted to monopolize the web browser market and tied its web browser to its OS unlawfully. Microsoft appealed the ruling immediately. Three weeks after government attorneys filed their proposed punishment – to split Microsoft into two separate companies. On June 7, 2000 Judge Jackson ordered Microsoft's break up. The Judge intended the breakup as a remedy. One company would inherit all the operating systems software and the other would become "applications" company with all the remaining software assets. Fortunately this was not done. The consequences of this step are discussed later. At the end of June 2000 federal Appeals Court reverses the breakup order. "Someone missed fun during the trial and called these two companies 'Baby Bills' – a word play on 'Baby Bells' that came out of AT&T and Microsoft's CEO Bill Gates." [Economides, p. 32]

From August 2001 the lawsuit was held in front of the new Judge Colleen Kollar-Kotelly. On September 6, 2001 DOJ changed its mind and wanted a lesser penalty instead of the breakup. Under the administration of George Bush DOJ changed its attitude towards Microsoft and wanted to terminate the Case. On November 2, 2001 finally a settlement, agreement between Microsoft and DOJ was reached. Even though Judge Jackson also tried to reach a settlement his negotiations failed to succeed probably because of states' intransigence. Contrary to Judge Jackson, Judge Kollar-Kotelly preferred a settlement more and was consistent enough to reach it.

The proposed settlement required Microsoft to share its application programming interface (API) with third-party companies for five years on in order to restore to health computer market. It is important to note that the agreement did not comprehend any mandatory change of Microsoft's code nor prevented future software tying with Windows. On November 1, 2002 Judge Colleen Kollar-Kotelly accepted most of DOJ's proposal but nine states and the District of Columbia did not agree. At last on June 30, 2004, the U.S. Appeals Court unanimously approved the settlement with DOJ rejecting any objections that the punishment is insufficient. (The opposing states claimed that it does not prevent Microsoft's future anti-competitive actions.)

Now let's discuss the above mentioned events in more detail and moreover let's add the economic arguments as well.

4.2. The allegations

On May 18, 1998, the United States Department of Justice and the Attorneys General of 20 States and District of Columbia sued Microsoft for abusing monopoly power in its handling of operation system sales and web browser sales. The crucial question of this trial was whether Microsoft was allowed to bundle IE with Windows. The main allegations were:

1. The plaintiffs charged that Microsoft took unlawful actions to defend its dominant position in the market for OSs designed to run on Intel-compatible personal computers (PCs).
2. They accused Microsoft of violating § 2 of Sherman Act by using exclusionary, anticompetitive and predatory acts to maintain its monopoly power.

3. The plaintiffs also claimed that Microsoft illegally attempted to monopolize the web browser market (but fail to succeed), which is unlawful under § 2 Sherman Act.
4. They asserted that Microsoft took actions to preserve its market/monopoly position, concretely tying IE to Windows and making contracts with exclusive dealing arrangements, hence it violated § 1 of the Sherman Act. [according to the Conclusions of Law]

4.2.1. The Sherman Antitrust Act, 15 U.S.C. §§ 1-2

§ 1 Sherman Act, 15 U.S.C. § 1

Trusts, etc., in restraint of trade illegal; penalty

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. Every person who shall make any contract or engage in any combination or conspiracy hereby declared to be illegal shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding \$10,000,000 if a corporation, or, if any other person, \$350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

§ 2 Sherman Act, 15 U.S.C. § 2

Monopolizing trade a felony; penalty

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, and, on conviction thereof, shall be punished by fine not exceeding \$10,000,000 if a corporation, or, if any other person, \$350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

Many have questioned whether the Act improves competition and benefits consumers, or whether it merely aids inefficient businesses at the expense of larger, more innovative ones. Alan Greenspan, in his essay entitled “Antitrust” condemned The Sherman Act as stifling innovation and harming society. He said: “No one will ever know what new products, processes, machines, and cost-saving mergers failed to come into existence, killed by the Sherman Act before they were born. No one can ever compute

the price that all of us have paid for that Act which, by inducing less effective use of capital, has kept our standard of living lower than would otherwise have been possible.”^[5]

“Contrary to popular belief, for monopolization to be illegal under U.S. antitrust law, it is not sufficient for a company to ‘monopolize’ a market in the sense of possessing a very large market share, even a market share of 100 percent.” [Economides, p. 16]

4.3. Market definition

In this Case the market definition is crucial, therefore we will start with it. The definition of monopoly uses a “particular market” and that implies the biggest problem, because everything depends on how broad or narrow your market is. A narrowly defined market would flood the world with monopolies and violations of antitrust law. This problem is closely connected with substitutes and their definition. Unfortunately for the analysis, “substitute” is a subjective term.

Before we start with the software market, which is complicated and quite specific, let’s take an easier example first. Let’s consider cars and a car market – is it a market for personal cars only or does it include vans and trucks? This simple question has no natural or obvious answer. In fact, it cannot be answered; it can only be set up by an authority. It is impossible to set up a market definition for all goods. So just in case of legal problem, merger or acquisition courts are trying to define the market. This definition is primary problem of antitrust law and policy. Thus what is the relevant market in Microsoft Case?

Even the Court agreed that without a definition of the relevant market there is no way to measure Microsoft’s ability to lessen or destroy competition. The relevant market was defined by the Court as: “Currently there are no products, nor are there likely to be any in the near future, that a significant percentage of consumers worldwide could substitute for Intel-compatible PC operating systems without incurring substantial costs. Furthermore, no firm that does not currently market Intel-compatible PC operating systems could start doing so in a way that would, within a reasonably short period of time, present a significant percentage of consumers with a viable alternative to existing Intel-compatible PC operating systems. It follows that, if one firm controlled the licensing of all Intel-compatible PC operating systems worldwide, it could set the price of a license substantially above that which would be charged in a competitive market and leave the price there for a significant period of time without losing so many customers as to make the action unprofitable. Therefore, in determining the level of Microsoft’s market power, the relevant

market is the licensing of all Intel-compatible PC operating systems worldwide.” [FOF no. 18]

The Microsoft Case (Unites States v. Microsoft) is definitely the most famous antitrust case in the history. It is interesting to compare the opinions and testimonies of its opponents and supporters, therefore now I will quote Richard Schmalensee, a known economist and the then dean of MIT Sloan School of Management who testified as an expert witness in favor of Microsoft. According to Richard Schmalensee the market definition is also very problematic. “The product itself (Intel-compatible PC operating systems) is very unstable; it tends to add feature and functionality over time. Plaintiffs will tend to prefer yesterday’s narrow product categories, which might put word processors and spell checkers in separate markets, while defendants will look into future and consider a market for office suits. So static product definition is completely insufficient and the importance of market definition even increases in connection with allegations of tying and predatory actions.” [Schmalensee, p. 193]

4.4. The market for OSs and its characteristic features

“Market structure is the strategic elements of the environment of a firm that influence, and are influenced by, the conduct and performance of the firm in the market in which it operates.” [Koch, p. 73] Each market is specific but perhaps the OS market is more specific then the others.

Michael Katz, Professor of Economics at the University of California, Berkeley, USA, identified several features of software market with major antitrust implications. These features are extremely important, because what may look illegally in an ordinary market might be quite usual in the computer market. At first sight marginal costs are close to zero. Due to that it is impossible to use the theoretical condition for perfect competition where $MC = P$. That is software’s special feature number one. Fixed costs are enormous and OS development is a long-term investment with highly uncertain rate of return. So reward for bearing the risk is expected and Microsoft dared to bear the risk and succeed and now it is being punished. New products stand for the dynamic kind of competition that is out of monopoly theory range. When marginal costs equal zero and limits to the production do not exist the only thing that matters is demand. Thus well working, nice and user friendly product is desirable. Adding features and improving, besides rate wars, is the only way how to beat the competitors. But if you set the price close to zero, the fixed

cost will be never paid back and you will have to leave the market in the LR. Simply put, Microsoft bundling IE to Windows, made the best of participating and competing at more markets because Netscape focused only on its web browser. Therefore, when IE reached Netscape's quality it became more popular and won the "browser war" because it was advantageous.

Richard Schmalensee, economic witness who testified on behalf of Microsoft, recalled Schumpeterian visual angle. Joseph Schumpeter perceived capitalism as process of "creative destruction". The central issue of this theory is competition from new product, new technology, that will replace the old one, not just several similar products existing side-by-side. [Schmalensee, p. 192] Software industry seems to fit this theory.

4.4.1. System effects

The term "system effects" means that the value of a product depends on components available, and if they are not compatible and well made, you have to create your own components to increase the value of your leading product. In software industry components represent among others applications. In fact, Microsoft had two possibilities. Either put its future into hands and minds of applications writers and wait, or write its own applications. Millions of dollars were invested, would you wait or write?

4.4.2. Network effects

Network effects are similar but not the same. The term "network effects" refers to value of a product which increases with usage of this product by others. This positive effect together with scale economies makes the market leader the most effective and profitable market player. Moreover, network effects bring another advantage, this time for consumers; it sets the standards and ensures greater compatibility.

4.4.3. "Winner takes most"

Businesses with the kind of characteristics described above are called "winner takes most". It is a specific market where near monopoly is the only profitable and reasonable player. The essential features are system and network effects, significant economies of scale, high fixed costs, MC close to zero and standards (usually set by the leader). If you want to entry this market, you can either lose or succeed because "winner takes most". Any strategy that does not destroy your competitor is not rational thus near-monopoly is inevitable. [Schmalensee, pp. 192-195]

From the point of a market leader's view, character of the competition is a permanent threat that forces the leader to invest into development even when it has got a significant market share. It is easy to prove that innovations are present in the software industry. New perfect complement/application can also replace the dominant one, so as a leader you have to invest in applications/components as well. When you look closer on software market (including OS) nothing suggests that the pace of innovations is slowing down. There is no problem with innovations, but where is the border between adding features and functionality and creating new product? It is difficult to decide, but I think there is actually no need to decide. We should be aware of the market structure that Microsoft faces. "Winner takes most" industry is very specific, add the dynamic competition and you get a unique market structure which is not comparable to any market models created before. That is probably the reason why other giant corporations producing cars, cosmetics or anything else do not have Microsoft's antitrust problems.

Some specialists claim that free markets are inherently incapable of making good choice among competing products, technologies, and standards where values depend upon interactions among users.

4.4.4. Applications barrier to entry

According to the FOF no. 30 and 37 consumer's interest in a PC operating system is primarily derived from the ability of that system to run applications. The consumer wants an OS that runs, not only the types of applications that he knows he will want to use, but also those types in which he might develop an interest later. Also, the consumer knows that if he chooses an OS with enough demand to support multiple applications in each product category, later on he will be less likely to find himself straitened by having to use an application whose features disappoint him. Finally, the average user knows that, generally speaking, applications improve through successive versions. Thus he wants an operating system for which successive generations of his favorite applications will be released. The overwhelming majority of consumers will only use a PC operating system for which there already exists a large and varied set of high-quality, fullfeatured applications, and for which it seems relatively certain that new types of applications and new versions of existing applications will continue to be marketed at pace with those written for other OSs.

Consequently, software developers generally write applications first, and often exclusively, for the OS that is already used by a dominant share of all PC users.

Developers do not want to invest in writing or quickly porting applications for an operating system until it is clear that there will be a sizeable and stable market for it. What is more, consumers who already use one Intel-compatible PC operating system are even less likely than first-time buyers to choose a newcomer to the field, for switching to a new system would require these users to scrap the investment they have made in applications, training, and certain hardware. This unique feature is called “applications barrier to entry”. [FOF no. 30 and 37]

Applications writers fully depend on application programming interfaces (APIs) which allow the application to use the services of an underlying software platform, typically an operating system, nowadays prevailing Windows. It creates a kind of circle: if you write for one OS you need this exact OS for your application to work, which gives you the incentive to write for the OS that is most widespread. Thus, existing applications attract consumers to particular OS, and that is how the market works. This effect is called “positive feedback phenomena”. [Fisher, p. 182] People are reasonable and because computer is still rather expensive appliance, before the purchase consumers gather information.

The fact that far more applications are written for Windows than for other PC operating systems attracts consumers to Windows, because it reassures them that their interests will be met as long as they use Microsoft’s product. I consider this to be an advantage, especially from a consumer’s point of view.

But no one is being protected from a challenge by better product. When the markets are allowed to function properly, consumers get superior products at lower prices. “Perhaps Microsoft is investing in expanding the Windows network to make Windows more attractive and entry more difficult. But it would be irrational to do this if plaintiffs were right and Windows’ market position was not fragile.” [Schmalensee, p. 194] If Schmalensee was wrong, the Court would deny one of the main economic assumptions that markets are rational and consumers maximize their utility.

In the sense of reasons written above, Microsoft itself could be considered as a barrier to entry in the OS market. Its unique knowledge base, goodwill, market policy, distribution policy, marketing and world-wideness is almost impossible to gain overnight. Nevertheless that is not Microsoft’s fault; on the contrary, it is a characteristic feature of OS market. The standardization of all administration tasks is heavily underestimated and it will be used later in favor of Microsoft. On the other hand, no market is less stable than

computer both hardware and software market therefore a completely new dimension of IT can appear easily.

4.4.5. Microsoft perceives its market position in the future as insecure

Software market leaders frequently fail the traditional test for monopoly power in the antitrust sense of substantial power. You do not even need to test them; the market share is self-apparent, price above MC to cover the fixed costs and a substitute of comparable quality usually does not exist. The software market resembles computers that know only two possibilities, yes or no, one or zero, win or lose. If you want to entry this market, you can either lose or succeed because “winner takes most”. Only few companies can market the same product. This is the engine of all innovations, you either survive or will be replaced. But survival means that you have only extended your existence and the competition never stops. Microsoft definitely cannot rely on its power in the LR, first because of direct evidence of dynamic competition. Secondly, if it was secure behind the barriers to entry, as we have already showed, the price charged for Windows would be much higher.

I stated “Microsoft cannot rely on its power” and it really does not rely on it. When I went through Microsoft’s annual reports I was very surprised that Microsoft feels threatened and insecure about its future. You can make you own opinion, in the Annual Report 2006, part risk factors, there is written: “We continue to experience intense competition across all markets for our products and services. Our competitors range in size from Fortune 100 companies to small, specialized single-product businesses and open source community-based projects. While we believe the breadth of our businesses and product portfolio offers benefits to our customers that are a competitive advantage, our competitors that are focused on a narrower product line may be more effective in devoting technical, marketing, and financial resources to compete with us. In addition, barriers to entry in our businesses generally are low. The Internet as a distribution channel and the non-commercial software model described above has reduced barriers to entry even further. Open source software vendors are devoting considerable efforts to developing software that mimics the features and functionality of our products. In response to competitive factors, we are developing versions of our products with basic functionality that are sold at lower prices than the standard versions. These competitive pressures may result in decreased sales volumes, price reductions, and/or increased operating costs, such

as for marketing and sales incentives, resulting in lower revenue, gross margins and operating income.

We make significant investments in new products and services that may not be profitable. We have made and will continue to make significant investments in research, development, and marketing for new products, services, and technologies, including Windows Vista, the 2007 Microsoft Office system, Xbox 360, MSN Search, Windows Server and Windows Live. Investments in new technology are inherently speculative. Commercial success depends on many factors including innovativeness, developer support, and effective distribution and marketing. Significant revenue from new product and service investments may not be achieved for a number of years, if at all. Moreover, new products and services may not be profitable, and even if they are profitable, operating margins for new products and businesses may not be as high as the margins we have experienced historically.” This is very unusual deliverance for someone who is claimed to have monopoly power and feels safe behind barriers to entry as the plaintiffs claimed (see FOF no. 34).

How fragile can be a position of the market leader? It might be more unstable than expected. Let’s recall IBM Corporation. In 1970s IBM was the computer market leader and it has lost its dominant position through the years. Just like Microsoft it was also accused of violating the Sherman Act. IBM defended patiently and diligently claiming that the government had been penalizing its success. The litigation took 13 years and then was cancel as unjustified. It has lost the sense because 13 years of computer development changed the entire computer industry. [Samuelson, pp. 620-621]

4.4.6. Microsoft’s power

Power in the antitrust sense was defined by the Court as “power to control prices or exclude competition”. In the first place market power does not mean the same as market share. The history of Microsoft Corporation in chapter 2 and the browser wars prove that there were always competitors and Microsoft could never rest on its laurels. Giant investment and innovations support the fact that the competition was tough at any time. In accordance with the FOF no. 35: “Microsoft possesses a dominant, persistent, and increasing share of the worldwide market for Intel-compatible PC operating systems. Every year for the last decade, Microsoft’s share of the market for Intel-compatible PC operating systems has stood above ninety percent. For the last couple of years the figure has been at least ninety-five percent, and analysts project that the share will climb even

higher over the next few years. Even if Apple's Mac OS were included in the relevant market, Microsoft's share would still stand well above eighty percent."

In spite of the uncertain tests for market power listed in chapter 3.4. and the fragile future of market leader in 4.5.3. Microsoft is still (automatically) assumed to have a significant market power. Unfortunately, public opinion does not even doubt its future power.

According to the Judge, Microsoft enjoys so much power in the market for Intel-compatible PC operating systems that if it wished to exercise this power solely in terms of price, it could charge a price for Windows substantially above that which could be charged in a competitive market. Moreover, it could do so for a significant period of time without losing an unacceptable amount of business to competitors. In other words, Microsoft enjoys monopoly power in the relevant market. Viewed together, three main facts indicate that Microsoft has monopoly power. First, Microsoft's share of the market for Intel-compatible PC operating systems is extremely large and stable. Second, Microsoft's dominant market share is protected by high barriers to entry. Third, and largely as a result of that barrier, Microsoft's customers lack a commercially viable alternative to Windows. [FOF no. 33 and 34]

If you abuse your power on purpose, you will be definitely found guilty for breaking the antitrust law. Nevertheless, we cannot forget that software market is kind of "winner takes most" market. Any strategy that does not destroy your competitor is not a rational strategy thus near-monopoly is inevitable. Plaintiffs used Microsoft's internal email as evidence that Microsoft wanted to abuse its position on purpose. That is where "*cut off Netscape's air supply*" comes from. Emails might be evidence of intention but to violate Sherman Act you have to do something more serious.

To sum up this problem, I will quote what R. Schmalensee wrote on behalf of Microsoft Corporation. "Since most software firms fail, there would be no entrants into the business if the category leaders were not highly profitable. Finally, in many software categories, network, system and scale economies protect market leaders against entry by products of COMPARABLE quality, though they may offer little protection against innovators, and the pace of innovations is generally brisk" [Schmalensee, p.193] and this characteristic feature is not measurable.

4.5. What Microsoft did?

This chapter deals, among others, with the pricing of Windows and IE. Judge Jackson claimed that Microsoft's actions were predatory. [COL, p. 2] However, this argument is inconsistent with the economic theory. Microsoft has always priced Windows significantly lower than the monopoly price would be and IE has been free all the time (see chapters 4.5.1. and 4.5.6.). Microsoft's prices are steadily low and on this account they cannot be called predatory per se.

Usually it is difficult to distinguish if the drop in prices happened due to predatory pricing or because of legitimate price competition. Diagnosing predatory conduct is not easy. Economy usually calls the act predatory when it is reasonable only if it harms or destroys competitors. Courts are more strict and take into account even the costs of encouraging competition, realizing that sometime you need to sacrifice part of your profit to be profitable in the future.

I have already mentioned one expert witness and now it is time for the other. Franklin M. Fisher from MIT, Department of Economics was chief economic witness for the U.S. He testified on behalf of DOJ despite the fact that in 1970s he gave testimony in favor of IBM in *United States v. IBM* (1968). This might have lowered his credibility. He argued and defined anticompetitive act as: "An anticompetitive act by single firm is one that is not profit-maximizing without the monopoly rents that it creates or maintain but is profit-maximizing with those rents included." [Fisher, p.180]

4.5.1. The price of Windows

Now let's have a look at Microsoft's price of Windows. Nicholas Economides in his paper "The Microsoft Antitrust Case" quotes Microsoft's economic witness who derived at the trial the price of Windows. The witness derived the hypothetical price – what the price would be if Microsoft behaved like a monopoly. Price set according to the monopoly theory is an important characteristic feature of monopoly. From consumer's point of view it is the price what matters the most. Not even Microsoft's sworn enemies deny improving quality and expanding functionality of Windows.

At the time of the trial "Microsoft priced its operating system to original equipment manufacturers (OMEs) at an average price of \$40-60, a ridiculously low price compared to the static monopoly price. The derivation of monopoly price follows: let P_H be the price of the PC hardware (everything except Windows) and let P_W be the price of Windows.

Assume that Windows is installed on all PCs, i.e. that Microsoft has 100 percent share. Since hardware and software are combined in a ratio of 1:1, the demand of a PC with Windows is $D(P_H + P_W)$. Microsoft's profit from Windows sales is:

$$\Pi_W = P_W * D(P_H + P_W) - F_W$$

Where F_W are the fixed costs of developing Windows, and the marginal costs are negligible. Maximizing Π_W implies MR equals MC, i.e.

$$D(P_H + P_W) + P_W * \partial D / \partial P_W = 0 \iff 1 + [P_W / (P_H + P_W)] * [(P_H + P_W) / D] * [\partial D / \partial P_W]$$

$$D(P_H + P_W) + P_W * \partial D / \partial P_W = 0 \iff P_W / (P_H + P_W) = 1 / |\epsilon|$$

Or equivalently, the monopoly price of Windows is:

$$P_W = P_H / (|\epsilon| - 1)$$

Where $|\epsilon| = - [(P_H + P_W) / D] * [\partial D / \partial P_W]$ is market elasticity of demand for PCs with Windows. If one assumes that the average price of PC hardware is \$1 800 and the elasticity is $|\epsilon| = 2$, the monopoly price of Windows is $P_W = \$1 800$. Even if one assumes a much higher elasticity, $|\epsilon| = 3$, and a much lower average price of PC hardware at \$1 200. The monopoly price is \$600, which is ten to twelve times the price charged by Microsoft to OMEs. In the Windows monopoly price formula, if the PC hardware price of \$1 800 one requires an elasticity of $|\epsilon| = 31$ to get a Windows monopoly price of \$60. A PC hardware price of \$1 200 one requires an elasticity of $|\epsilon| = 21$ to get a Windows monopoly price of \$60. It is extremely unlikely that the market for PCs exhibits such large market elasticities." [Economides, pp. 20-21]

To quote Adam Smith: "*The price of monopoly is upon every occasion the highest which can be got.*" (The Wealth of Nations, Book I, Chapter VII, Adam Smith) This is the first evidence in support of an allegation that Microsoft is not exactly what we call monopoly. Microsoft's economic witness showed that the static monopoly price was about \$1 800, a large multiple of Microsoft's actual price. At first glance, it seems that Microsoft could not have monopoly power in OSs market when price of its operating system was about 3 percent of the monopoly price.

4.5.2. Internet Explorer

The center of Microsoft Case is its web browser IE. Nowadays IE seems to be so common that one can hardly remember so called “browser war”. It is a name for the competition for dominance in the web browser market. It testifies that Microsoft had to fight for its market share and won. In fact, there was one browser war and the other is still going on. The first one took place at the end of 1990s and it was especially intense struggle between IE and Netscape Navigator. The ongoing browser war is between IE and Mozilla Firefox that fights for its future.

It all began long time ago, in the early 1990s, when many simple browsers were available. One of them – Mosaic – became popular and its developer founded Mosaic Communications Corporation and developed a new browser called Mosaic Netscape. It became number one due to its usability and “evaluation copies” that were available free of charge. Because of legal issues the browser was renamed Netscape Navigator. At that time Microsoft licensed Mosaic as a building stone for its own browser. IE 1.0 was released as a part of Windows 95 Plus! And short after that IE version 2.0 followed. The browser war began.

One new version followed after another and new features were preferred to bugs fixing. Due to this the browsers were slightly unstable, but IE was improving and the competition continued. IE 3.0 caught up on Netscape and IE 4.0 defeated it. At that time Netscape had 72 percent of the web browser market share and Microsoft had only 18 percent. But IE 4.0 was faster, obeyed the standards and was considered as a system upgrade. The ongoing “war” brought new problem – compatibility, and web designers started to use “best view in logos”. A lot was at stake for everybody.

Why has Microsoft won? It had some (fair) advantages: First of all, Netscape’s financing was vulnerable, depending on a single product – Navigator. Secondly, Microsoft Windows had over 90 percent share of the OS market, hence its financing was not so fragile and Microsoft was able to finance browser development until it reached Netscape’s level and it was also able to employ “joint costs” which could be defined as “The costs incurred to produce a certain amount of two or more products where the cost of producing one product cannot be logically isolated and cost allocation is arbitrary.”^[6] Web browser and OS are very good examples of closely linked products.

On the other hand, it might also resemble “cross-subsidization” which is illegal under the 42 U.S.C. § 1395x but “cross-subsidization” according to the WTO is defined

differently: “The practice of using profits generated from one product or service to support another provided by the same operating entity”.^[7] However, this definition does not say anything about investment or development.

4.5.3. Microsoft’s investment in Internet Explorer

Microsoft’s campaign against Netscape consisted of several actions. Firstly, Microsoft increased its investment into browser technology. “During 1995-7 Microsoft devoted more than \$100 million per year to browser software development.” [Klein, p.47] Due to that IE was better done and able to run truly “dynamic pages”.

Table 1: Microsoft Corporation’s Revenue, Net income and R&D. (in millions USD)

Year	Revenue	Research and development	Net income
1985*	140	17	24
1986*	198	21	39
1987*	346	38	72
1988*	591	70	124
1989*	805	110	171
1990*	1186	181	279
1991*	1847	235	463
1992*	2777	352	708
1993*	3786	470	953
1994*	4714	610	1146
1995*	6075	860	1453
1996*	9050	1326	2195
1997*	11936	1863	3454
1998*	15262	2601	4490
1999*	19747	2970	7785
2000*	22956	3772	9421
2001*	25296	4379	7345
2002	28365	6299	5355
2003	32187	6595	7531
2004	36835	7779	8168
2005	39788	6097	12254
2006	44282	6584	12599

* Not restated for adoption of SFAS 123

Source: <http://www.microsoft.com/msft/financial/default.aspx> (on April 13, 2007)

4.5.4. Internet access providers

The District Court focused on alleged exclusionary actions. According to the Judge the most effective distribution channels of browsing software are Internet access providers (IAPs) and original equipment manufactures (OEMs). “PCs are typically connected to the Internet through the services of Internet access providers, which generally charge subscription fees to their customers in the United States. The main types of IAP are online services (OLSs) such as America Online (AOL)” [FOF no. 15]

America Online informed both Microsoft and Netscape that it intended to use a new browser technology on an exclusive basis. Consumers of AOL were indifferent and the agreement made economic sense because of standardization. Microsoft won the competition for browser by offering substantially more than Netscape. This was a very important step in the ongoing competition. Microsoft won the competition for the AOL account due to several reasons. It offered IE for free and developed a special version of IE where AOL’s homepage was a start page and also included AOL in the online services folder of the Windows desktop, everything free of charge. AOL agreement was valid for two years and after that it was prolonged. In fact, Microsoft bore significant cost, but all of this made business sense. Netscape refused to offer similar “gratis” contract. Nevertheless, Netscape still could be used by AOL’s consumers when they asked for it. Microsoft made similar agreement with some others IAPs. [Klein, pp. 50-55]

OEMs and IAPs were not the only way how to get Netscape browser. Netscape Navigator could still be downloaded for free over Internet or ordered by mail. During the discussion “how to obtain a web browser” consumers were little omitted. Every consumer decides on his or her expenditure and market is the best proof of product’s qualities. Demand reflects consumers’ wishes (see Figure 4, p. 49) and Microsoft did not hamper the usage of Netscape.

There is a significant difference between Microsoft and Netscape concerning their attitude to browser war. Microsoft wanted to win in order not to lose its unique position in the OS market, but Netscape wanted to win in order to become a significant player in both browser and OS market. Microsoft wanted to maintain its position; thus it invested more because it could lose more. Netscape (only) wanted to reach a position. The Court categorized the agreement with AOL as anticompetitive. Direct profits from IE were negligible and indirect profits – preservation of Windows monopoly as a platform – were claimed to be predatory. “However paying for distribution is analytically identical to

Microsoft making investment in improved browser quality and it is exactly what one would expect as part of open competition for platform dominance. As long as Microsoft is not taking advantage of its incumbent monopoly position, we should be reluctant to short circuit this competitive process that clearly benefits consumers with claims of predatory behavior.” [Klein, p. 55] Microsoft simply offered better deal and that is why Netscape have lost.

4.5.5. Tying of IE with Windows

Another way how to distribute IE was the OEMs channel. In this case Microsoft had an advantage over Netscape. It works subsequently: “Microsoft licenses copies of its software programs directly to consumers. The largest part of its MS-DOS and Windows sales, however, consists of licensing the products to manufacturers of PCs (known as ‘original equipment manufacturers’ or OEMs), such as the IBM PC Company and the Compaq. An OEM typically installs a copy of Windows onto one of its PCs before selling the package to a consumer under a single price.” [FOF no. 10]

What exactly is meant by tying? IE was technologically integrated into Windows and Microsoft included in the contract with OEMs prohibition of removal of the IE icon from the Windows desktop. “Microsoft both refused to license its operating system without a browser and imposed restrictions — at first contractual and later technical — on OEMs’ and end users’ ability to remove its browser from its operating system.” [FOF no. 155]

The Court wanted technical reasons that could explain Microsoft’s refusal to license Windows 95 without IE and claimed that this action has no economic sense, otherwise than taking advantage against Netscape. But the computer software design is choice and right made by its author. Microsoft’s internal emails (see FOF no. 166-169) showed that IE was always perceived as a feature not as a separate product. Moreover, according to the 1995 consent decree, Microsoft was allowed to expand Windows’s functionality. In addition “bundling that is undesirable by a significant group of customers only creates an opportunity for its rivals”. [Fisher, p. 181]

It is important to stress that adding features is a common practice. Software developers focus on new functions and usually you are forced to pay (IE was free) for much more useless functions than IE is. It is easy to find an example to support this statement; when you pay for something you do not want in order to get something that you really want. To illustrate the matter, if you buy a new CD player, it has over dozen features

(like karaoke) that you will never use and in spite of this fact, you are forced to pay for them because you want to listen to high-quality music.

“Microsoft did not license a version of Windows without browser advocating by the assertion that the integration gives consumers single browsing experience no matter if browsing the web or their own hard disc.” [Fisher, p. 182] As well you cannot buy a cell phone without Bluetooth when you prefer nice design. This problem relates to the wide range of appliances; however it was only Microsoft that was sued. If contractual tying is prohibited OEMs could easily change appearance of Windows and it would be Windows no more. The argument that Microsoft should have offered Windows version with no browser is absurd. Since the time of the Court Internet has become one of the most important tools for a lot of activities. Microsoft did not charge for IE and above all “Microsoft always provided Netscape with technical information necessary for Navigator to work with Windows.” [Klein, p. 57] Netscape has always functioned with Windows.

At this point I would like to write down my personal experience and add some comments about integrated – ready to use browser. I have learned a lot about computers during last few years and I clearly remember how I was trying to change some items listed at the bottom toolbar and I accidentally removed IE icon from the desktop (now it is possible). It took me a while to place it back and I was confused because Internet is definitely a thing which I need. The Court mentioned consumers’ confusion as an answer to the possibility to download Netscape free over Internet. In my opinion, if you are able to distinguish the difference between IE and Netscape then you are definitely able to download Netscape and install it properly. And if you are not able to distinguish them, you are glad to have a free and working browser that you do not have to take care of. Computers are here to work and ease your assignments.

Windows is a unique trade mark. Among others, it guarantees Windows’s abilities and with browserless version this image would suffer (and would affect marketing strategy). The discussion about IE icon was long and the Court dedicated it a lot of attention, including videos how to remove the IE icon from the desktop. Notwithstanding it is quite improbable that one small icon could be an anticompetitive act according to the Sherman Antitrust Act.

However, Microsoft did reduce the royalty price of Windows to personal computer manufactures that set IE’s logo and links to Microsoft’s IE update page on their computer manufacturer’s homepages.

But Netscape, despite the situation, did not really fight. Its market share was substantial and it did not launch any promotional campaign, any action to support its browser. Netscape did not protect itself and instead of free market competition it sued Microsoft.

Professor Fisher from MIT testified on behalf of DOJ despite the fact that in 1970s he gave testimony in favor of IBM in *United States v. IBM* (1969). Both cases concern bundling and the question of monopoly leveraging, however, they are not as similar as they seem to be. The reason why Professor Fisher (almost 40 year ago) defended IBM follows. He stated: “IBM’s bundling in the relatively early day of the computer history was response to computer demand, providing a guarantee that computers would function and solve users’ problems. That was highly desirable in a period in which computers were great, unfamiliar, frightening beasts.” [Fisher, p. 180] These adjectives relate to the computers no more. Notwithstanding, computers are still here for the same reason – to solve users’ problems. The difference is in the market situation, in those days computers were a brand new product for professionals only and they were also less integrated. It was easier to enter the computer market because the already existing know-how was not so grand.

On the other side, Professor Fisher called the 1997 agreement with Apple pressure and stressed that Microsoft’s actions were not profit maximizing unless it expected them to insure its market position. But in the “winner takes most” industry that is the only reasonable strategy. Surprisingly, he did not find OS market features exceptional enough to exonerate Microsoft’s conduct.

4.5.6. Pricing IE at zero

Consumers definitely benefited from getting IE free of charge because before IE reached Netscape’s quality, Netscape both charged for its browser and gave away large number of free copies. Right after Microsoft released IE 4.0, Netscape stopped charging for its browser completely. And again government claimed that pricing at zero does not make business sense and that Microsoft met the generally accepted legal requirement for predatory pricing – price set below MC, not regarding that MC of IE are in fact very close to zero. The Court did not consider important the fact that free browser can generate advertising revenues and in addition it can support the sales of complementary applications. That is the reason why you can get for example Adobe’s Acrobat Reader for free and why Netscape at the beginning gave away free copies. The purpose is to create

a consumer base and afterwards to enjoy the benefits that the browser offers. Unfortunately for Microsoft Judge Jackson had a different opinion and claimed that Microsoft was holding monopoly power and priced IE at zero to protect its monopoly position.

Figure 4 (page 49) is used with kind permission of Benjamin Klein (who served in the past as a consultant to Microsoft Corporation but did not take part in the lawsuit). This graph shows that none of Microsoft's marketing actions turned out to be useful or successful until IE reached Netscape's quality. A lot was at stake so as a rational economic agent Microsoft was battling on many fronts including investment, bundling, pricing at zero, OEMs and IAPs channel. The first version of IE was not included in Windows 95 but was released shortly after it in a pack called "Windows 95 Plus!". IE 1.0 was a part of what was then called "Internet Jumpstart Kit" and it was priced at zero from the beginning as a feature of Windows. The government argued that the investment and effort were excessive and reasonable only when Microsoft expected to reach monopoly profits. Criticism of the amount invested is absurd, investment cannot be found anticompetitive. Eventually, the browser war resulted in significant consumers' benefit.

Giving IE free of charge was considered almost as a dumping price. Although IE's marginal costs really are close to zero. I am convinced that the scope of this problem could influence our perception. But I dare say that the principles should be the same all the time, not regarding the size or power. Let's have an example. In Prague there are several newspapers that are distributed in the streets for free. Since last year you can even choose among three – Metro, 24 hodin and Express. Every day you get news for free. The point is that within easy reach there is a tobacco store SELLING newspapers. Why should I buy the news if I can get them free of charge? The quality is not comparable, but it is definitely sufficient to find out what is going on today. I searched Internet for the way people read news and it turned out that most of them just skip through the pages and read the whole article only when they are interested in the headline. Real readers form a minority. However, none of paid-newspapers publishers sue Metro (which is international), 24 hodin or Express for dumping price and therefore for the distortion of the market. Despite that each of them prints about 200 000 news a day (for comparison: Dnes circulation is 390 000 pieces, LN – 109 000 and Právo – 212 000 on average, Blesk circulation is 559 000 but it is a tabloid, Source: Abbccr). And still there is no prosecution; Office for the Protection of Competition has not received any complaints. In fact, nobody cares about things mentioned above. Therefore, the question is, how come that free IE caused the most famous antitrust

trial in the history? The principle is similar and the consequences could not be more different.

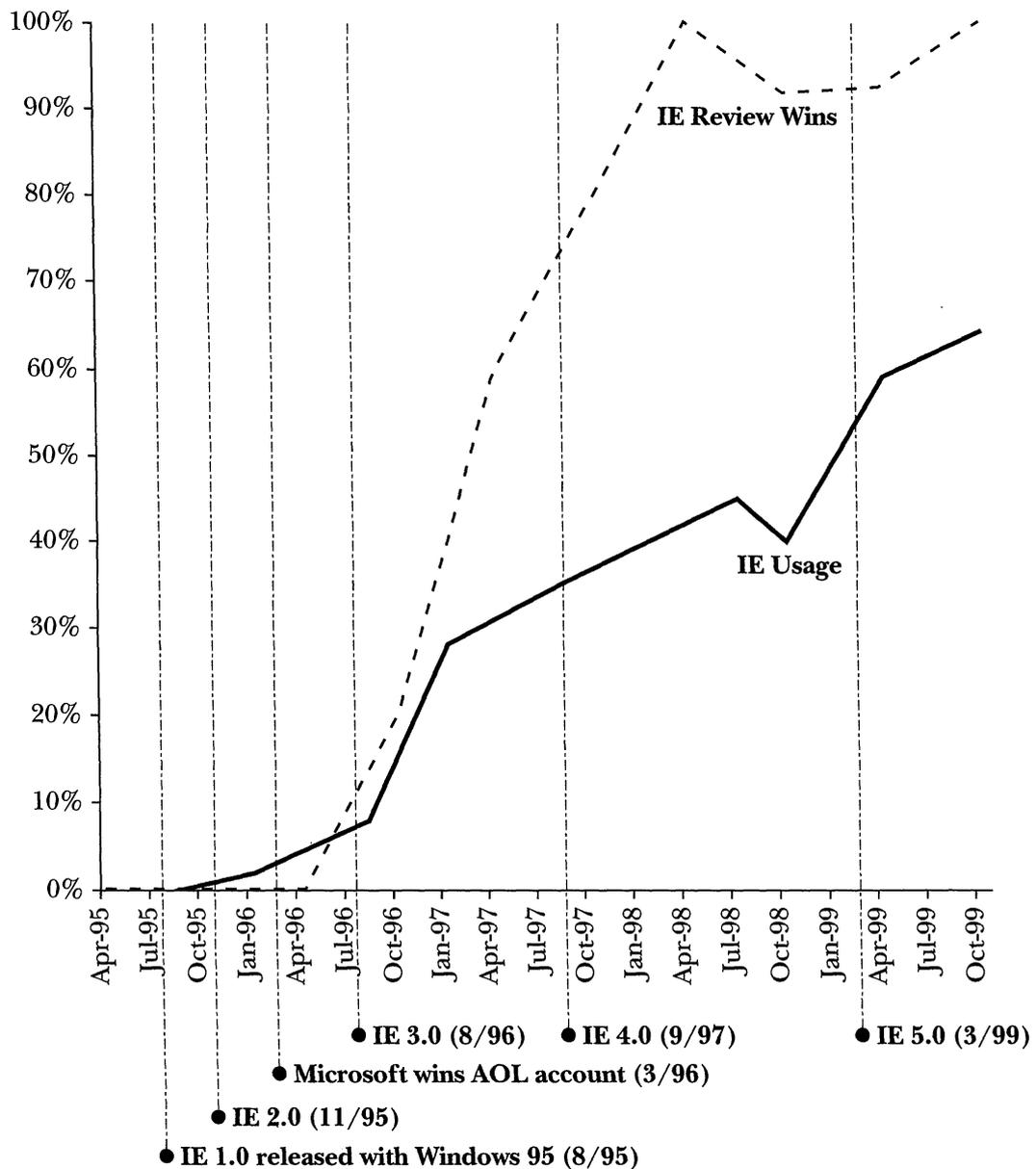


Figure 4: Trends in Internet Explorer's share of review wins and usage.

(Source: Klein, p. 48)

Microsoft's actions were rational because software is close to "winner takes most" industry. One of Microsoft's CEOs allegedly said that the point was to "cut off Netscape's air supply". Combined with few Netscape's bad decisions IE took over and became the main web browser, having a market share above 90 percent. It is fair to mention that the pace of browser innovation slowed down shortly after the first browser war ended and

bugs fixing took place instead. And what is the lesson from the browser war? “The big lesson learned is that a window of opportunity exists for a second-mover to challenge the first-mover.”^[8]

5. Microsoft’s defense

Let’s modify the question asked earlier: “What beneficial Microsoft did?” There are several reasons on behalf of Microsoft. Firstly, economy grows due to the technological changes and a technological change can be shown as a shift of aggregate production function. But to achieve a shift of aggregate production function you need to implement new knowledge on a large scale, if it is possible worldwide. Only a big and strong company is able to implement e.g. new technology worldwide and therefore increase utility of society as whole. The idea can come out of a small firm or individual, but to bring computers to every day life requires more.

The conditions under which you can invent something new have changed dramatically. Back at the beginning of the 20th century most patents were granted to individuals, nowadays patents are predominantly granted to corporations. R&D is extremely expensive and needs to be continuous, thus a firm has to bear big risk for a long time. Small firm has usually lesser incentive to risk and it cannot fully exploit the economies of scale. Big company on the other hand can spread the risk, survive some bad investment and it can more easily exploit the advantage of new knowledge. [Koch, chapter 9, pp. 177-201]

Secondly, Microsoft’s performance is beneficial even if you are not Microsoft’s direct consumer. Standardization increases Microsoft’s value for the whole society. Everyone profits from it. The Court somehow omitted this advantage. Let’s imagine an incompatibility between competing platforms; imagine and consider all the problems that would incompatibility cause to the state’s administrative, firms and offices. Think about the additional costs. Thanks to Microsoft man is able to use almost every computer on the planet. You do not need any assembler or additional programs. As well as network and systems effects benefit consumers and society, incompatibility would certainly harm them. In “winner takes most” industry monopoly may maximize social surplus. “Standardization is valuable, even if it is done by a monopolist.” [Economides, p. 14]

The third argument was already mentioned (see chapter 4.1). In July 1994 Microsoft signed a consent decree. This consent decree imposed two restrictions and

the vertical one forbids contractual tying but allows expanding the functionality of Microsoft's products (technological tying). So Microsoft argued that it was legal to integrate IE in Windows.

Other arguments concerning the competition, innovations and pricing are discussed in more details in the chapter 4. The Schumpeterian hypothesis that also supports Microsoft is mentioned in chapters 3.5 and 4.

5.1. How badly was Microsoft affected by the trial?

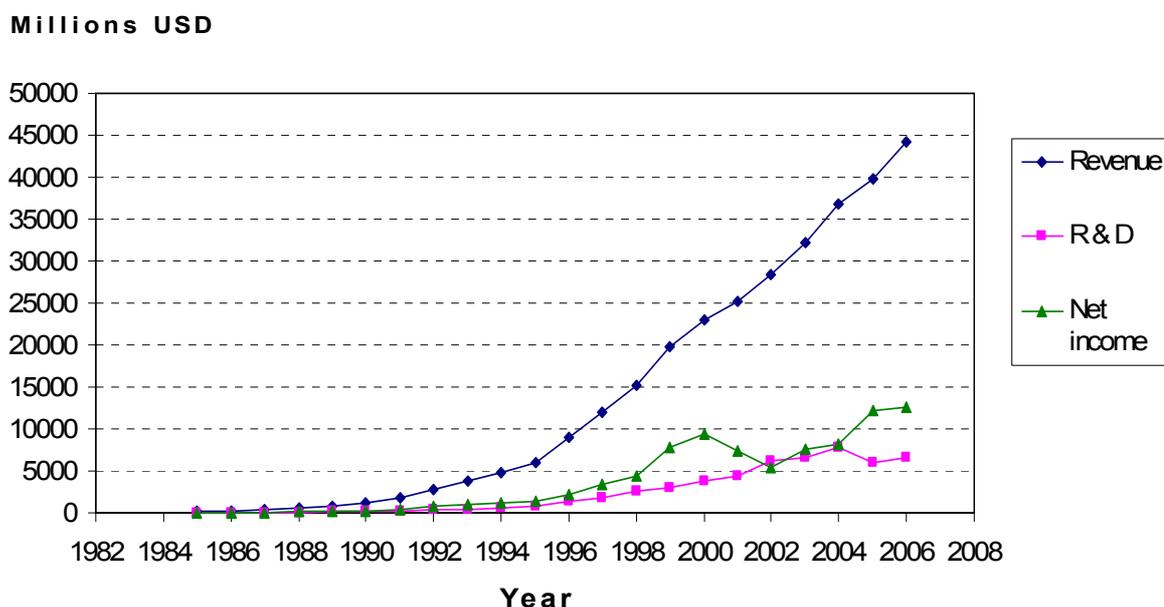


Figure 5: Trend in Revenue, R&D and Net income from 1985 till 2006.

(Source: <http://www.microsoft.com/msft/financial/default.aspx>, on April 13, 2007)

As we can see the revenue was not affected by six years long lawsuit. One could expect a modest influence on Microsoft's revenue, but the Figure 5 shows that Microsoft is very stable and trustful company. However, the adverse impact of the trial was most likely balanced by the revenue from new products. Windows 98 and Windows XP that was released in October 2001 probably shielded Microsoft from a decline in revenue. The threat of a breakup was very serious, but the confidence in Microsoft turned out to be greater. Although the breakup order was issued on June 7, 2000 and reversed almost a year later on June 28, 2001 it did not influence revenue. Surprisingly, even a year of uncertain future did not visibly affect Microsoft Corporation.

R&D expense increased steadily and was not affected by the court case for the same reasons as revenue. There is a slight decline in R&D expense in 2005 when the Case was almost settled down and according to the Annual Report 2005 the decline did not have any specific reason. R&D is Microsoft's priority and most of its software products are developed internally. The amount invested in R&D usually represents about 20 percent of revenue in a particular year.

Though revenue is increasing steadily there was a significant, two years long drop in the net income that happened in 2001 and 2002. This decline was caused by an accounting change. "Effective as of July 1, 2000, the Company adopted Statement of Financial Accounting Standards (SFAS) no. 133, which established the accounting and reporting standards for derivative instruments and for hedging activities. All derivatives, whether designated in hedging relationships or not, are required to be recorded on the balance sheet at fair value. The adoption of SFAS 133 resulted in a huge cumulative pre-tax reduction to income and a large cumulative pre-tax reduction to Other Comprehensive Income (OCI). The net derivative losses included in OCI as of July 1, 2000 were reclassified into earnings during the twelve months ended June 30, 2001. The change in accounting from the adoption of SFAS 133 did not materially affect net income in 2001." [Microsoft Corporation Annual Report 2001]

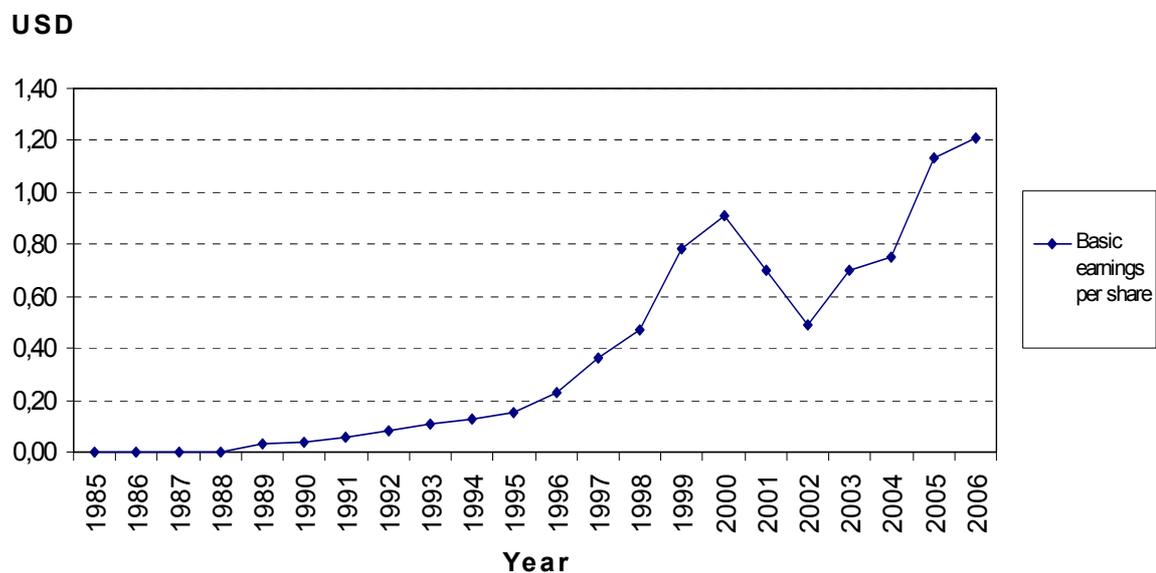


Figure 6: Basic earnings per share from 1985 till 2006.

(Source: <http://www.microsoft.com/msft/financial/default.msp>, on April 13, 2007)

Earnings per share are the earnings returned on the initial investment amount. The progress of basic earnings per share in fact copies the net income. Microsoft's shares do not reflect (in the LR) the trial and possible breakup. The Figure 6 again supports the size of Microsoft's stability and credibility. If consumers had anything against Microsoft, the lawsuit would deepen it and the figures would reflect it. The most important test that is done by market and market can hardly be impeached. In the market test consumers have the last word.

6. Final Judgment

It is said that everything that has a beginning has an end and so has the Microsoft Case come to an end. Legally speaking it is closed up, the court ruling is summed up in the chapters below, but it did not end up for the market. This case has left an important bequest behind. It has set up a judicial precedent and its danger is hidden especially in the legal legacy of Judge Thomas Penfield Jackson's Findings of Fact. No one knows when or how the findings will be used again.

Web browser became the core issue but the real problem was more about the future leading platform. Plaintiffs even assumed that if Microsoft had not acted illegally, Netscape could have attracted more applications writers and could have become an alternative to Windows. During any trial it is more than surprising to hear that something "could have happened", the uncertainty of this kind of statement is so grand that it cannot be taken into consideration. We should take into account that despite the lawsuit it is still an economic issue and what "could have happen" does not exist in economy. Some of government's charges were based on speculations and forecasts, and even the applications barrier to entry is not so obvious and stable. "The 'barrier' seems to be formed by word processor, browser, spreadsheet, database and utility package; other applications are not so wide-spread. So there are five programs to overcome most of applications barrier to entry." [Brady, p.230]

Another argument of this kind was that Microsoft could have made more money by selling IE than giving it away. However, if selling IE decreased the likelihood that Windows would become the leading platform, Microsoft would not produce IE at all and this matter would certainly harm consumers. Instead of this consumers benefited from having a browser for free and from improved Windows platform that enabled better applications. On this basis Microsoft was accused of predatory actions. Again plaintiffs

used Microsoft's documents and emails to have an evidence of the intention to ruin Netscape but in "winner takes most" industry that is the only reasonable strategy. [Schmalensee, p. 195]

6.1. So ordered Colleen Kollar-Kotelly

Final Judgment (FJ) originally entered on November 12, 2002 was slightly modified on September 7, 2006. The Microsoft Case ended up after four years long lawsuit. DOJ and Microsoft have reached an agreement but their "cooperation" has not finished up to this day. Right at the beginning of the Final Judgment, which is actually only eighteen pages long, is one very important conclusion, namely: "Final Judgment does not constitute any admission by any party regarding any issue of fact or law." [FJ, p. 1] It was a big surprise that no fine was imposed. Despite the fact that no fine had to be paid Microsoft did pay some money. It is common that defendant pays the fees and costs when plaintiffs prevail in an antitrust case. Concretely Microsoft paid \$28.6 million, \$25 million of it was to cover the costs of the litigation and attorney fees. The rest \$3.6 million is to finance the continued enforcement of and compliance with the FJ.^[9]

Microsoft did not object to pay the fees and costs and it could be perceived as a "loser" but from economic point of view Microsoft is certainly a winner. Two years ago (in 2000) it was threatened with break up, the antitrust equivalent of the death penalty. Comparing the costs of reality and possibility is an easy task. "Microsoft acted rationally and its patience paid off. Microsoft's legal team always thought that time was on their side. They expected a more business friendly DOJ with the election of Republican George W Bush and they were right."^[10]

6.1.1. Prohibited Conduct

The FJ deals predominantly with "Prohibited Conduct" and "Compliance and Enforcement Procedures". Which conduct is prohibited?

Microsoft is not allowed to punish an OEM by altering its commercial relations with that OEM for doing business (distributing, promoting etc.) with any software that competes with Windows OS and Microsoft middleware products – generally, these are parts of Windows OS like IE or Windows Media Player, service packs, upgrades or bug fixes.

Microsoft has to treat the 20 OEMs with world's highest volume of licenses in the same way. This means uniform license agreements with uniform terms and conditions. Royalties should be published and based on objective criteria, volume discount is allowed.

Microsoft shall not restrict by agreement any OEM's license. Microsoft is not permitted to limit installing and displaying icons, shortcuts or menu entries for any non-Microsoft products. If any restrictions are posed due to technical reasons they have to be non-discriminatory.

Microsoft shall not enter into exclusive agreement with anyone distributing Windows.

It is mandatory for Microsoft to disclose to OEMs, ISVs (independent software vendors), IHVs (independent hardware vendors), IAPs and ICPs (Internet content providers) for the sole purpose of interoperating or communicating with Windows OS the APIs and related documentation. Microsoft simply has to disclose parts of its source code in order to enable the program writers to write programs that would work well with Windows.

Microsoft must allow end users and OEMs to enable or remove access to each middleware product by displaying or removing icons, shortcuts, or menu entries on the desktop or Start menu. Microsoft needs to permit non-Microsoft middleware products to be set up as default. The Company ensures that Windows OS does not automatically alter an OEM's configuration of icons, shortcuts, etc. installed without first seeking confirmation from end user. Automatic alteration should be unbiased.

Microsoft shall offer to license any intellectual property rights owned or licensable by Microsoft that are required under FJ. The scope of any such license need be no broader than it is necessary under FJ. [Chapter 6.1.1. is done according to the Modified FJ from 7.9.2006.]

6.1.2. Compliance and Enforcement Procedures

The plaintiffs shall have exclusive responsibility for enforcing the FJ. According to the order the three-person Technical Committee (TCO) has to be established to assist enforcement of and compliance with the FJ. The TCO members shall be experts in software with no conflict of interests. First member is selected by the plaintiffs and the second one by Microsoft. The third member is identified by the members chosen by Microsoft and plaintiffs. Each TCO member serves for 30 months and can be reappointed once. The TCO serves at the costs and expense of Microsoft.

TCO's powers and duties are to monitor Microsoft's compliance with FJ. The members are entitled to interview employees, inspect and copy documents and have granted access to any facility, equipment or system. The TCO shall have access to Microsoft's source code and is subject to Confidentiality Agreement that prohibits the disclosure of any information obtained as a TCO member. The TCO shall report in writing to the plaintiffs every six months and no public statements relating to the TCO's activities can be made by its members. [Chapter 6.1.2. is done according to the Modified FJ from 7.9.2006.]

"Microsoft shall designate an internal Compliance Officer who shall be an employee of Microsoft with responsibility for administering Microsoft's antitrust compliance program and helping to ensure compliance with the FJ." [FJ, p. 13]

6.1.3. Termination of the Final Judgment

The termination paragraph is one of those that were modified. The original FJ is set to expire on November 12, 2007. Unless the Court grants an extension the Modified FJ (now valid) will expire on November 12, 2009. The word prolongation would describe better the alterations made in the FJ but it is called modified. Until expiration of the Modified FJ the plaintiffs shall have the right to apply to the Court for an extension of the FJ up to three additional years (that is, through November 12, 2012). Microsoft has agreed that it will not oppose any such extension. [Modified FJ, p. 15]

The whole FJ cannot be summarized into several paragraphs so in a nutshell: Microsoft is allowed to do whatever it wants as far as it is not inconsistent with the FJ and Microsoft's intellectual property rights are not affected. [According to the FJ.]

7. Conclusion

The world's largest software maker has won the "battle" (in fact not legally) but the "competition war" continues and there will certainly be new problems, battles and competitors to overcome. As Microsoft's history shows the Corporation is good at software producing, marketing and forecasting the future development of the market. That is why it is still here.

Microsoft was accused of abusing monopoly power in its handling of operation system sales and web browser sales and the Case finished when an agreement was reached.

After all what Microsoft has gone through, the order is surprisingly reasonable and it harms neither competition nor consumers. It ensures that Microsoft does not enter any deal that could distort the market and imposed no fine. This fact could lead to an idea that it may be profitable for a firm to compare costs of a trial and gains of breaking the antitrust law. But such speculation is very risky and due to extreme risk far from reality. However, I would like to stress a different thing; Microsoft and DOJ were able to come to an agreement and that is a good precedent.

The Microsoft Case has far reaching consequences. It implies an important question: “What limits should be placed on dominant firm’s ability to compete aggressively in defending its market position. Microsoft should not be guilty of anticompetitive actions just because its CEOs were planning to defeat Netscape aggressively. All successful competitive actions that benefit consumers have a negative effect on competitors.” [Klein, p. 46]

When judging Microsoft all characteristic features of the OS market (listed in chapter 4) have to be taken into consideration. The OS market is too special and specific to be covered by the contemporary monopoly theory. I would like to highlight that to have power does not mean to abuse power and Microsoft could have always charged more for Windows, but it never did. By contrast, it brought computers to ordinary people and enhanced their possibilities as was proved by the market.

No scientific theory can be developed as quickly as innovations in computer industry and that is why the monopoly theory is one step behind the market. But even if the competition policy, having monopoly theory in its center, is not perfect, it is still a tool that was developed to protect competition. Protection of competition/antitrust policy is a mixture of economics and law and that is why it is less exact. Nevertheless, it is a tool which serves its purpose, but competitors may have various incentives to open an antitrust prosecution and every idea can be misused.

“Antitrust has become a means by which failing businesses seek their own benefit at the expense of those who succeed in the free market.” [Brady, p. 230] Prosecution of Microsoft shows how difficult antitrust enforcement can be in practice. The effect of government on innovation is to be discussed. The government might have harmed the consumers even more than Microsoft. I would not call motivating the possible threat of several years long inquest, in my opinion this is a very unpleasant precedence.

The opinions on the settlement differed considerably. One part of society believed that free market competition in OS market was destroyed and that the State is the only one

which can restore it (and it has failed to do so in Microsoft's Case). This part has found the sanctions inadequate and wanted more aggressive penalty. From my point of view the only thing a state can do is to establish the conditions suitable for free market competition and to protect them. Free competition needs properly functioning legal system, reliable and efficient institutions, stable political situation and minimal restrictions, prevailing in the sense of standards and safety. Our experience (the process of transformation after Velvet Revolution in 1989) shows and proves that the state is rarely better than the market. I share my opinion with the other part which maintains that Microsoft is not abusing its power. As one of the government's top economic witnesses admitted – so far Microsoft has not done (on purpose) anything that would harm consumers and according to the BBC, Judge Colleen Kolar-Kotelly said that the allegations were not supported by any economic analysis.^[10]

Some people say that the only solution is to break up the company, or at least withdraw its exclusive ownership rights to its operating system code. But Microsoft's power in the OS market did not come out of the blue. It is a function of two factors. Firstly, intellectual property law gives Microsoft property rights in its code. These rights include the power to preclude others from copying and altering its code. Windows as well as IE are unique products that cannot be substituted easily. Microsoft has a fair advantage of special knowledge of its products. Secondly, the characteristic features of the OS market cause the tendency to single platform and stable market leader.

I do not agree with the statement that network effect, systems effects and applications form barrier to entry. Objective circumstances should not be called anticompetitive. A circumstance that applies uniformly to all competitors is not qualified as barrier to entry, such a circumstance is reality, characteristic feature.

I also find quite controversial that it is the lawyers who are solving serious economic issue – monopoly in practice. You cannot become an economist overnight. It takes more than reading a book. Therefore, it seems to me that the Court tried to get an economic view "overmonth". Economy as a science stands somewhere in the middle. It is neither exact science like mathematics nor social science like sociology. Economy is different. When you are a judge "somewhere in the middle" might be a problem because as a judge you just cannot stand in between. In fact, the Court knows only two possibilities. That is what it has in common with computers, yes or no, on and off, zero or one, guilty or innocent.

Microsoft, Windows and the Windows logo are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

8. Bibliography

- [1] Microsoft's motto available at:
<http://www.microsoft.com/msft/corporate/default.mspix> (14. 2. 2007)
- [2] Microsoft's vision available at:
http://www.microsoft.com/asia/careers/mslife/company_history.mspix (14. 2. 2007)
- [3] Microsoft's motto available at:
<http://www.microsoft.com/windows/WinHistoryDesktop.mspix> (14. 2. 2007)
- [4] www.patentarea.com (8. 4. 2007)
- [5] Alan Greenspan statement available at:
http://en.wikipedia.org/wiki/Sherman_Antitrust_Act (8.4.2007)
- [6] Joint costs definition available at:
www.ventureline.com/glossary_J.asp (2.5.2007)
- [7] WTO's definition of "cross-subsidization" available at:
http://www.wto.org/wto/english/tratop_e/serv_e/telecom_e/tel12_e.htm (2.5.2007)
- [8] *Lessons from the Browsers Wars* by Pai-Ling Yin available at:
<http://hbswk.hbs.edu/item/5288.html> (10.4.07)
- [9] Statement released on November 29, 2002 by Iowa Attorney General Tom Miller, *States will not appeal in Microsoft Case*, available at:
http://www.state.ia.us/government/ag/latest_news/releases/nov_2002/Appeal.html
(2.5.2007)
- [10] *Microsoft wins battle but war continues* by Kevin Anderson, BBC News, released on November 1, 2002 available at:
<http://news.bbc.co.uk/1/low/business/2390189.stm> (2.5.2007)
- BRADY, Gordon L. *Public Choice*. No. 117. 2003. pp. 228-231. (Center for Study of Public Choice, George Mason University, Fairfax, VA, U.S.A.)
- ECONOMIDES, Nicholas. *The Microsoft Antitrust Case*. Journal of Industry, Competition and Trade, 1:1, 2001. pp. 7-39.
- FISHER, Franklin M. *The IBM and Microsoft Cases: What's the Difference?*
The American Economic Review, Vol. 90, No. 2, Papers and Proceedings of the One Hundred Twelfth Annual Meeting of the American Economic Association. May, 2000. pp. 180-183.
- GILBERT, Richard J.; KATZ, Michael L. *An Economist's Guide to U.S. v Microsoft*.
The Journal of Economic Perspectives, Vol. 15, No. 2. Spring, 2001. pp. 25-44.

GRIFFITHS, Alan; WALL, Stuart. *Applied Economics: An introductory course*. 6th ed. New York: Longman Publishing, 1995. pp. 769. ISBN 0-582-24631-8.

KLEIN, Benjamin. *The Microsoft Case: What Can a Dominant Do to Defend Its Market Position?* The Journal of Economic Perspectives, Vol. 15, No. 2. Spring, 2001. pp. 45-62.

KOCH, James V. *Industrial Organization and Prices*. Prentice-Hall, Inc., Englewood Cliffs, New Jersey, USA, 1974. pp. 383. ISBN 0-13-462473-4.

SAMUELSON, Paul A.; NORDHAUS, William D. *Ekonomie*. 2nd ed. Praha: Svoboda, 1995. pp. 1011. ISBN 80-205-0494-X.

SCHMALENSEE, Richard. *Antitrust Issues in Schumpeterian Industries*. The American Economic Review, Vol. 90, No. 2, Papers and Proceedings of the One Hundred Twelfth Annual Meeting of the American Economic Association. May, 2000. pp. 192-196.

TRESCH, Richard W. *Principles of Economics*. West Publishing Company, MN, USA, 1994. pp. 1264. ISBN 0-314-02754-8.

VARIAN, Hal R. *Mikroekonomie: moderní přístup*. Praha: Victoria Publishing, 1995. pp. 643. ISBN 80-85865-25-4.

WALLACE, James; ERICKSON, Jim. *Bill Gates and the Making of the Microsoft Empire*. 1st ed. New York: HarperCollins Publishers, 1993. ISBN 0-88730-629-2.

Microsoft's web page:

www.microsoft.com (March 2007)

Annual reports, information for investors available at:
<http://www.microsoft.com/msft/default.mspix>

Bill Gates – CV available at:
<http://www.microsoft.com/presspass/exec/billg/bio.mspix>

Information for journalists available at:
<http://www.microsoft.com/presspass/default.mspix>

Windows Desktop Products History available at:
<http://www.microsoft.com/windows/WinHistoryDesktop.mspix>

Windows Vista Fact Sheet from January 2007 available at:
<http://www.microsoft.com/presspass/presskits/windowsvista/default.mspix>

The United States DOJ's website on U.S. v. Microsoft:

Civil Action No. 98-1232 (TPJ), U.S. District Court for the District of Columbia,
http://www.usdoj.gov/atr/cases/ms_index.htm (April 2007)

Conclusions of Law from April 3, 2000 available at:
<http://www.usdoj.gov/atr/cases/f218600/218633.htm>

Findings of Fact from November 5, 1999 available at:
<http://www.usdoj.gov/atr/cases/f3800/msjudgex.htm>

Final Judgment from November 12, 2002 (modified on September 7, 2006)
available at:
<http://www.usdoj.gov/atr/cases/f218300/218339.htm>

Sherman Antitrust Act, 15 U.S.C. §§ 1-7 available at:
<http://www.usdoj.gov/atr/foia/divisionmanual/ch2.htm#a1>

Bill Gates before Microsoft available at:
<http://ei.cs.vt.edu/%7Ehistory/Gates.Mirick.html> (24. 3. 2007)

Newspapers information available at:
<http://www.abccr.cz/tabperiod/2007/Leden%202007.xls> (14. 4. 2007)

The Unusual History of Microsoft Windows by Mary Bellis available at:
<http://inventors.about.com/od/mstartinventions/a/Windows.htm> (24. 3.2007)

U.S. v. Microsoft: Timeline available at:
<http://www.wired.com/techbiz/it/news/2002/11/35212> (24. 3. 2007)

What is the history of Microsoft Windows? available at:
http://www.dewassoc.com/kbase/hard_drives/file_systems_win3x.htm (24. 3.2007)

9. Glossary

AC	average costs
AOL	America Online
API	application programming interface
BBC	British Broadcasting Corporation
CEO	chief executive officer
COL	Conclusions of Law
CPU	central processing unit or simply processor
CR	Concentration Ratio
DOJ	Department of Justice (of the United States)
DWL	dead weight loss
FJ	Final Judgment
FOC	first order condition
FOF	Findings of Fact
GUI	graphical user interface
HHI	Herfindahl-Hirschman Index
IAP	Internet access provider
IBM	International Business Machines Corporation
ICP	Internet content provider
IE	Internet Explorer
IHV	independent hardware vendor
ISP	Internet service provider
ISV	independent software vendor
IT	information technology
LR	long run
LRAC	long run average costs
LRMC	long run marginal costs
MC	marginal costs
MR	marginal revenue
MS-DOS	Microsoft Disk Operating System
OCI	Other Comprehensive Income
OEM	original equipment manufacture
OLS	online service

OS	operating system
PC	personal computer
R&D	research and development
SFAS	Statement of Financial Accounting Standards
SOC	second order condition
SR	short run
TC	total costs
TCO	Technical Committee
TR	total revenues
USB	Universal Serial Bus
USD	United States Dollar
U.S.C.	United States Code
WTO	World Trade Organization

10. Appendix – Sherman Antitrust Act, 15 U.S.C.

§ 1 Sherman Act, 15 U.S.C. § 1

Trusts, etc., in restraint of trade illegal; penalty

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. Every person who shall make any contract or engage in any combination or conspiracy hereby declared to be illegal shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding \$10,000,000 if a corporation, or, if any other person, \$350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

§ 2 Sherman Act, 15 U.S.C. § 2

Monopolizing trade a felony; penalty

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, and, on conviction thereof, shall be punished by fine not exceeding \$10,000,000 if a corporation, or, if any other person, \$350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

§ 3 Sherman Act, 15 U.S.C. § 3

Trusts in Territories or District of Columbia illegal; combination a felony

Every contract, combination in form of trust or otherwise, or conspiracy, in restraint of trade or commerce in any Territory of the United States or of the District of Columbia, or in restraint of trade or commerce between any such Territory and another, or between any such Territory or Territories and any State or States or the District of Columbia, or with foreign nations, or between the District of Columbia and any State or States or foreign nations, is declared illegal. Every person who shall make any such contract or engage in any such combination or conspiracy, shall be deemed guilty of a felony, and, on conviction thereof, shall be punished by fine not exceeding \$10,000,000 if a corporation, or, if any other person, \$350,000, or by imprisonment not exceeding three years, or by both said punishments, in the discretion of the court.

§ 4 Sherman Act, 15 U.S.C. § 4

Jurisdiction of courts; duty of United States attorneys; procedure

The several district courts of the United States are invested with jurisdiction to prevent and restrain violations of sections 1 to 7 of this title; and it shall be the duty of the several United States attorneys, in their respective districts, under the direction of the Attorney General, to institute proceedings in equity to prevent and restrain such violations. Such proceedings may be by way of petition setting forth the case and praying that such violation shall be enjoined or otherwise prohibited. When the parties complained of shall have been duly notified of such petition the court shall proceed, as soon as may be, to the hearing and determination of the case; and pending such petition and before final decree, the court may at any time make such temporary restraining order or prohibition as shall be deemed just in the premises.

§ 5 Sherman Act, 15 U.S.C. § 5

Bringing in additional parties

Whenever it shall appear to the court before which any proceeding under section 4 of this title may be pending, that the ends of justice require that other parties should be brought before the court, the court may cause them to be summoned, whether they reside in the district in which the court is held or not; and subpoenas to that end may be served in any district by the marshal thereof.

§ 6 Sherman Act, 15 U.S.C. § 6

Forfeiture of property in transit

Any property owned under any contract or by any combination, or pursuant to any conspiracy (and being the subject thereof) mentioned in section 1 of this title, and being in the course of transportation from one State to another, or to a foreign country, shall be forfeited to the United States, and may be seized and condemned by like proceedings as those provided by law for the forfeiture, seizure, and condemnation of property imported into the United States contrary to law.

§ 7 Sherman Act, 15 U.S.C. § 6a (Foreign Trade Antitrust Improvements Act of 1982)

Conduct involving trade or commerce with foreign nations

Sections 1 to 7 of this title shall not apply to conduct involving trade or commerce (other than import trade or import commerce) with foreign nations unless such conduct has a direct, substantial, and reasonably foreseeable effect

- A. on trade or commerce which is not trade or commerce with foreign nations, or on import trade or import commerce with foreign nations; or
- B. on export trade or export commerce with foreign nations, of a person engaged in such trade or commerce in the United States; and
- C. such effect gives rise to a claim under the provisions of sections 1 to 7 of this title, other than this section.

If sections 1 to 7 of this title apply to such conduct only because of the operation of paragraph (1) (B), then sections 1 to 7 of this title shall apply to such conduct only for injury to export business in the United States.

§ 8 Sherman Act, 15 U.S.C. § 7

"Person" or "persons" defined

The word "person", or "persons", wherever used in sections 1 to 7 of this title shall be deemed to include corporations and associations existing under or authorized by the laws of either the United States, the laws of any of the Territories, the laws of any State, or the laws of any foreign country.

11. Thesis

UNIVERSITAS CAROLINA
PRAGENSIS
založena 1348

Univerzita Karlova v Praze
Fakulta sociálních věd
Institut ekonomických studií



Opletalova 26
110 00 Praha 1
TEL: 222 112 330,305
TEL/FAX:
E-mail:
ies@mbox.fsv.cuni.cz
<http://ies.fsv.cuni.cz>

Akademický rok 2006/2007

TEZE BAKALÁŘSKÉ PRÁCE

Student:	Petra Luňáčková
Obor:	Ekonomie
Konzultant:	Ing. Zdeněk Hrubý, CSc.

Garant studijního programu Vám dle zákona č. 111/1998 Sb. o vysokých školách a Studijního a zkušebního řádu UK v Praze určuje následující bakalářskou práci

Předpokládaný název BP:

The Microsoft Case

Charakteristika tématu, současný stav poznání, případné zvláštní metody zpracování tématu:

The Microsoft Case is a live problem that may have a broad influence. It puts crucial questions about the appropriate role of competition policy in the twenty – first century and about monopoly itself. Microsoft Corporation is huge and it is everywhere. Regarding the way it gained the market power or not we have to deal with it. Does it use its power to disadvantage consumers? What are the overall profits and losses? Microsoft represents high-technology. That is a brand new field which does not fit the monopoly theories built before. Perhaps it deserves an update.

Struktura BP:

The Microsoft Case

- 1) Introduction: Microsoft Corporation and the monopoly theories
- 2) Timeline
- 3) What Microsoft did?
- 4) Software market
- 5) Final judgment
- 6) Affected by the trial
- 7) Conclusion

Seznam základních pramenů a odborné literatury:

ECONOMIDES, Nicholas. *The Microsoft Antitrust Case*. Journal of Industry, Competition and Trade, 1:1, 2001. pp. 7-39.

GILBERT, Richard J.; KATZ, Michael L. *An Economist's Guide to U.S. v Microsoft*. The Journal of Economic Perspectives, Vol. 15, No. 2. Spring, 2001. pp. 25-44.

KOCH, James V. *Industrial Organization and Prices*. Prentice-Hall, Inc., Englewood Cliffs, New Jersey, USA, 1974. pp. 383. ISBN 0-13-462473-4.

SAMUELSON, Paul A.; NORDHAUS, William D. *Ekonomie*. 2nd ed. Praha: Svoboda, 1995. pp. 1011. ISBN 80-205-0494-X.

TRESCH, Richard W. *Principles of Economics*. West Publishing Company, MN, USA, 1994. pp. 1264. ISBN 0-314-02754-8.

VARIAN, Hal R. *Mikroekonomie: moderní přístup*. Praha: Victoria Publishing, 1995. pp. 643. ISBN 80-85865-25-4.

Datum zadání:	říjen 2006
Termín odevzdání:	červen 2007

Podpisy konzultanta a studenta:

Petra Luňáčková

Ing. Zdeněk Hrubý, CSc.

V Praze dne 27.10.2006