JÖNKÖPING INTERNATIONAL BUSINESS SCHOOL
JÖNKÖPING UNIVERSITY

Consumer Benefit and Anti-trust

A Study on Microsoft's Anticompetitive Behaviour

Bachelor Thesis within ECONOMICS

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Jönköping JANUARI 2007

Kandidatuppsats inom nationalekonomi

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Datum:	**Januari 2007**
Ämnesord:	**Microsoft, Konsumentnytta, Konkurrenslagar Kombinationsförsäljning**

Sammanfattning

Denna uppsatts ämnar ge bättre förståelse för företagsstrategier som kan, och har blivit bevisade, strida mot konkurrenslagarna i USA samt Europa. Konkurrenslagarna har skapats för att upprätthålla perfekt konkurrens på marknaden. Konsumentnytta står ofta i fokus när vi ska definiera den perfekta marknadsplatsen. Vi kommer att se hur perfekt konkurrens är skapad och sedan krossat med fusioner, kombinationsförsäljning och försök att bygga monopolistiskt övertag. För att vinna marknadsandelar och differentiera från konkurrenter på marknaden använder sig företag av olika strategier. Här kommer vi att se kvantitetsättade strategier samt produktbindande strategier.

Denna studie fokuserar på Microsoft fallet där vi får följa företaget genom rättsprocesserna i USA och Europadomstolen, där företaget har använt sig av tekniska inställningar för att tvinga konsumenter fortsätta använda deras produkter. Microsoft har större delen av marknaden för persondatorer och har bevisligen utnyttjat sin monopolistiska position på marknaden för att exkludera konkurrenter från marknaden. Många ekonomer har påstått att Shermanakten är tillräckligt utförlig för att döma alla konkurrensfall, medan andra påstår att man inte kan applicera konkurrenslagarna vid Microsoft fallet då nätverkseffekter skapar en odefinierbar marknad.

Utmaningen visar sig vara att jämföra värdet och standardiseringsfördelarna med skadan mot marknadskonkurrenter. De nuvarande konkurrenslagarna förutsätter, i de flesta avseenden, att det är fler än en aktör som tillsammans agerar för att bestämma prissättningen på marknaden. Det har därför varit svårt att se hur Microsoft skulle kunna bryta mot dessa lagar som en ensam aktör. Konkurrenslagarna är skapade för kunders nytta, och det finns inga bevis att Microsoft hämmar detta, tvärtom har Microsoft bara främjat konsumentnyttan.

Bachelor's Thesis in Economics

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Key words:	**Antitrust, Consumer Benefit, Bundling**

Abstract

This research seeks to better understand anticompetitive behaviour and laws created to uphold perfect competition. Consumer welfare is often in focus as we try to define the perfect market place. We shall see how the perfect market is created, and shattered by mergers, tying and attempts at building monopoly power. Strategic behaviour is an essential ingredient for companies to gain market shares and differentiate from competitors in a market. Quantity setting strategies and product bundling are investigated as strategies to gain a more competitive standpoint compared to competitors in a market.

This study is focused on the Microsoft Case where we follow the company through prosecution in United States Supreme Court to their recent judgement in the EU Court. Many economists have claimed the Sherman Act to be tentatively sufficient, whilst others have said that antitrust laws cannot be applied on the Microsoft Case as network externalities create an irresolute market place.

The challenge at hand is to compare, and value, the benefits of bundling and standardization on one hand, and multiplicity of competition on the other.

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1 Introduction

The Sherman Act formed laws to fight "trust companies," known as mergers, collusion, and cartels. (Black 2005). The Standard Oil Trust was the first cartel prosecuted and was dissolved 1906 (Droz 2004). These laws are now known to society as antitrust laws. Other countries use the term competition law.

Bundling products create many profitable opportunities for companies to differentiate their product line and may lead consumers to purchase products they otherwise would not consider buying. This can be used as a marketing strategy to differentiate from competitors or to overcome market shares in related markets were the company is active. The bundling strategy is most efficient were the company can benefit from economies of scale in production. The marginal cost of the bundled products must be low to gain profitability. Bundling may simplify purchase decision and benefit from the joint performance of the combined product.

If a company enjoys oligopolistic or monopolistic power in the market, product bundling can be seen as an unfair use of market power because it limits the choices available to the consumer and this is typically called product tying. This research will investigate if Microsoft, which enjoys monopolistic power, limits choices for consumers. Benefits of compatibility will be taken into account when we compare damage caused on markets and against consumers.

Microsoft has been prosecuted for this damage against consumers and competing companies and the allegations began 1991 from the United States Department of Justice. The prosecutions have continued and 1994 they were strong enough to be taken to court. However, Microsoft has been freed, up until 1998 when they were convicted. It took an additional 6 years, to 2004, for Microsoft to be convicted by the European Commission in the EU Court.

1.1 Problem

The fundamental values behind antitrust laws are rooted in consumer welfare. Microsoft has now been prosecuted in the United States and in the European Union for violating these laws. We shall see the gains of compatibility in the network for software products, which we will compare to the harm against competitors. The other competitors have been excluded and unfair business practice has left them with an insignificant share of the market, not covered by Microsoft's products. So, there is the remaining question of what to value the most; Consumer Benefit or Perfect Competition in an antitrust case?

1.2 Purpose

This research will examine whether bundling products in the Microsoft case benefits the consumer in more ways than it harms them.

1.3 A Note on Antecedence and Method

This is a subject and case, which is, ground breaking within antitrust legislation. Many attempts have failed to prosecute Microsoft, however, the company was finally convicted. Nicholas Economides paper (2001), "The Microsoft Antitrust Case", gives a clear picture of Microsoft's antitrust allegations is shown from the early 90´s to the conviction in 1998, in the case United States v. Microsoft, which is said to be a landmark of antitrust interventions in network industries. The European Commission has freed Microsoft of all allegations, until 2004 when they were severely punished for recent behaviour. The study is taken further in a paper from the University of Michigan called, "Economic Theories of Bundling and their Policy Implications in Abuse Cases: An Assessment in Light of the Microsoft Case" written by Kai-Uwe Kühn, Robert Stillman and Cristina Caffarra, where we can see strategies behind bundling products. Further theory in bundling was studied in a paper from UCLA (University of California) called "Bundling Retail Products: Models and Analysis" written by McCardle K. F., K. Rajaram and C. S. Tang.

The Sherman Act will be examined thoroughly to find fundamental values in antitrust legislation, which will be compared to an empirical study that try to find preferences from frequent Microsoft users. Interviews with thirty students around Jönköping International Business School have been analysed to form a conclusion about consumer's perception and preferences in computer software and bundling which will be compared their, the United States Supreme Court's and the European Commission's opinion.

1.4 Outline

- In the second chapter "Background to Antitrust Legislation" we shall see the history behind antitrust and different forms of collusion
- The third chapter "Courts ruling in the Microsoft case" will examine courts ruling and values in their judgement against Microsoft.
- In chapter four, will examine "Economic Theory" and discuss strategic models to gain strategic advantages over competitors in the same market.
- The last chapter "Empirical Analysis" will describe preferences from thirty students about Microsoft and bundling.
- The main arguments and results are finally presented in the "Conclusion" where consumer benefit and antitrust legislation are discussed.

2 Background to Antitrust Legislation

We shall here see the history behind antitrust laws and their fundamental values are examined. Certain actions and behaviour are considered to violate the Sherman Act, and therefore be characterized as anticompetitive. Antitrust laws are meant to uphold and create an open market for all competitors, to enhance competition.

2.1 History

The passage of the Sherman Act year 1890, by the United States President Benjamin Harrison, is the first step in history of antitrust policy to fight unfair competition in markets.

The Sherman Act used the words like "trust" and "trust companies" as their initial charge was to break up the Standard Oil Trust. Senator John Sherman of Ohio, who formed the Act said: "If we will not endure a king as a political power we should not endure a king over the production, transportation, and sale of any of the necessaries of life." (Thorelli p29 1978)

The Standard Oil Trust was formed by the industrialist John D. Rockefeller and started in the late 19th century. Standard Oil soon controlled the coalmines, railways transporting, pipe lines as well as refineries producing oil, which was the main fuel source at the time. (US Highway 2006)

The production generated waste products, known today as gasoline, which was used in the production of Vaseline.

As Standard Oil grew larger, they had the ability to discounts larger sales, contrary to competitors, which would be called predatory pricing today and seen as illegal. Soon the empire controlled 91 percent of the refined oil in the United States and the lawsuit began in 1904 to break up the Standard Oil Trust; "Rebates, preferences, and other discriminatory practices in favour of the combination by railroad companies; restraint and monopolization by control of pipe lines, and unfair practices against competing pipe lines; contracts with competitors in restraint of trade; unfair methods of competition, such as local price cutting at the points where necessary to suppress competition; [and] espionage of the business of competitors, the operation of bogus independent companies, and payment of rebates on oil, with the like intent." (Manns 1998)

2.2 Fundamental Values of Antitrust

Senator Sherman and Chief Justice White were both highly articulate about the goal of the Sherman Act namely to advance consumer welfare. Congress and courts believed that, "competition could be injured to the detriment of consumers by the agreed elimination of rivalry (through, for example, cartel arrangements, or monopolistic mergers)" (Thorelli p27 1978)

Cartel arrangements could take form by Horizontal collusion or Vertical collusion. Tying products can create unfair advantages. These are actions taken to gain market power, and ultimately exclude competition.

Microsoft is in the market of information technology were network effects and bundling can enhance the competitive position and gives them a bigger share of the market.

Network externalities are characterized by enhancing the value of a product or service to the customer dependent of the number users in the first place. One example is the telephone, which indirectly benefits other telephone users. (Rochet & Tirole 2001)

2.2.1 Per Se Illegal Tying

Tying is often a solution to lower production costs or generate other benefits such as increased convenience and variety to consumers. Tying can in many aspects be seen as anticompetitive behaviour, but are generally in economics regarded as beneficial for both producer and consumer. (Ahlborn 2004)

If the tying company has a significant market share, or monopoly power, they could exclude competition. Competition laws and the United States Supreme Court, under the Jefferson Parish decision 1984, took a hostile approach against companies when: "Tying agreements served hardly any purpose beyond the suspension of competition" and tying could be seen as per se illegal. (Parish p156 1984)

2.2.2 Rule of Reason

"Rule of reason" was applied to distinguish the companies tying to survive and companies intentions that were per se illegal to gain anticompetitive advantages. This rule categorized firms into two categories: "(1) business behaviour (or structure) that was per se illegal and (2) business behaviour that was judged by standards of the party's intent or the effect his behaviour that was likely to have, considering the market context." (Thorelli p13 1972)

There where later a modified per se illegality rule applied when the tying effect enhanced welfare, which was applied under United States versus Microsoft Corporation, 2001. The court took the efficiency effects of tying into account in the tying case with respect to computer software platforms. (D.C. Cir. 2001) The European Community court did, however, not take any action against tying, even though EU accounted for 25% global production, compared to the US, 33%. (World Bank 2006)

At this time there had been a conviction in the United States Supreme Court, however the European Commission freed them from all allegations.

2.3 Mergers

"I am strong alone, but together we are stronger" is a saying also adopted in the business world. There are often many profitable opportunities to merge with other companies, even if the company is in an entirely different industry.

2.3.1 Horizontal Collusion

Merging horizontally would mean a merger of companies producing the same product and could gain market power in a certain market among the involved companies. Each segment in the market is separately marketed to penetrate the whole market and exclude other companies, not involved in the collusion. Several small subsidiary companies could be created to differentiate target group or geographical areas.

2.3.2 Vertical Collusion

Merging vertically would mean two or more companies collude in the production stages of a product. This could be, and is often regarded as, a cost minimizing exercise. The company may be able to charge lower prices for its products and thereby gain market shares.

One of the most famous cases with respect to vertical collusion is the American Tobacco Company, which controlled a number of tobacco plantations as well as the production of tinfoil for its cigarettes. (Green 1978)

"There is an old story, I have heard, that IBM, the producer of personal computers, received a vertical collusion suggestion from Microsoft in the early 90's which would tie each copy of Windows software to one IBM computer with a royalties charge, IBM declined the offer, and each Windows software is now instead sold with a separate "product key". This is now seen as one of the biggest mistakes in the modern business world." The question, however, is; "Is this true, or would the world market have developed differently with would then have been two Apple-like alternatives?"

2.3.2.1 Vertical Tying

Tying related products, such as cars and service can be considered as "vertical tying". One example could be a sold car with five-year warranty and service. The car must be served in an authorised dealer workshop to be valid. This is a way for the dealership to "tie" the customer to their brand and services. Another example is the Gillette razors, which were distributed by mail to young men on their eighteenth birthday. This is a small initial cost for the company, if the young man becomes a loyal Gillette customer.

2.3.3 Conglomeration Collusion

Two companies in different industries merging would be called conglomerate collusion. There is an often gainful investment opportunity in other markets rather than your own that leads companies to allocate capital elsewhere.

Siemens AG is often seen as the world's largest conglomerate company as they operate in the telecommunication market as well as the medical market and is active in branches like financing and real estate.

3 Courts Ruling in the Microsoft Case

Allegations against Microsoft's anticompetitive behaviour began by the United States Department of Justice in 1991, and we shall later see the conviction by the European Court of Commission, year 2004. Fundamental values in antitrust will be compared to court decisions and reasoning.

3.1 United States Department of Justice

The first of many antitrust allegations against Microsoft took place 1991 by the United States Department of Justice, but did not hold to be taken to court. The allegations were taken to court the first time in 1994, but were terminated with a consent decree resulting in one horizontal and one vertical restriction. The horizontal restriction forced Microsoft to charge prices above marginal cost. The vertical restriction prohibits product bundling created by contracts, which left technological bundling explicitly allowed. (Economides 2001)

In May 18, 1998 court concluded that Microsoft maintained its monopoly power by anticompetitive means and attempted to monopolize the Web browser market, according to U.S. District Judge Thomas Penfield Jackson in the "conclusions of law". No later than four months after the final judgement shall Microsoft Corporation submit Court and the Plaintiffs a proposed plan of divestiture, to follow remedies and recreate an open market. (Economides 2001)

For a business, divestiture is the removal of assets from the books. Businesses divest by the selling of ownership stakes, the closure of subsidiaries, the bankruptcy of divisions, and so on. (Phillips 2006)

The separation plan should take no longer than 12 months to complete, and was essentially to separate Operating Systems Business from the Applications Business. After implementation of the plan the Operating System Business and the Application Business should be prohibited from merging, entering into any agreement or any other joint venture with each other. (BBC news 2000) Microsoft shall not take any action to affect any original equipment manufacturer (OEM) to use, distribute, promote, license, develop, produce or sell any product or service that competes with any Microsoft product or service. (BBC news 2000)

3.2 Tying and Bundling

The decision against tying and bundling restricted the right to sell licence to original equipment manufacturers (OEM) or any other licence arrangement. All middleware products, such as the word processing program, Word, shall be unbundled from Windows:

- "Ban on Contractual Tying. Microsoft shall not condition the granting of a Windows Operating System Product license, or the terms or administration of such license, on an OEM or other licensee agreeing to license, promote, or distribute any other Microsoft software product that Microsoft distributes separately from the Windows Operating System Product in the retail channel or through Internet access providers, Internet content providers, ISVs or OEMs, whether or not for a separate or positive price." (Final Judgement 1998)

- Restriction on Binding Middleware Products to Operating System Products. Microsoft shall not, in any Operating System Product distributed six or more months after the effective date of this Final Judgment, Bind any Middleware Product to a Windows Operating System." (Final Judgement 1998)

Even if this was the "big conviction" for Microsoft in the United States Supreme Court, Judge Jackson rejected some of the claims against the defending company and stated; "The facts do not support the conclusion, however, that the effect of Microsoft's marketing arrangements with other companies constituted unlawful exclusive dealing under criteria established by leading decisions under (section) 1" (of the Sherman Act). (US department of Justice)

Microsoft was never convicted for having used exclusive arrangements with other actors in the markets. Exclusive arrangements in markets with other actors was seen as the fundamental and decisive act in anticompetitive behaviour according to previous judgements, as the Standard Oil Trust and The American Tobacco convictions discussed earlier.

This high level of market shares can be seen as necessary to obtain economies of scale, and lower prices for computer software and Microsoft chairman Bill Gates said; "This ruling turns on the head the reality that consumers know that our software has made software for PCs more accessible and affordable to millions. As we move forward, we feel strongly about everything we've done and how we've behaved." (Wilcox 2000)

A government official, U.S. Attorney General Joel Klein, said in a press conference that it is not specifically remedies the government might seek against Microsoft. "We will look at all our options in the days ahead." He emphasized that the government's main concern is protecting consumers and ensuring "the violations are not repeated." (Robert 2001)

3.3 The European Commission

The European Commission concluded in Brussels, 24 March 2004, after a five-year investigation, that Microsoft Corporation broke European Union competition law by leveraging its near monopoly in the market for PC operating systems.

Microsoft were forced, within 120 days, to disclose to competitors the source code of Windows which allow programs to talk to each other and, within 90 days, make the media player unbundled from Windows. In addition, Microsoft was fined € 497 million for abusing its market power in the European Union. (BBC news 2000)

"Dominant companies have a special responsibility to ensure that the way they do business doesn't prevent competition on the merits and does not harm consumers and innovation," said European Competition Commissioner Mario Monti. "Today's decision restores the conditions for fair competition in the markets concerned and establish clear principles for the future conduct of a company with such a strong dominant position," he added. (European Commission 2004)

The abuse of market power by Microsoft deliberately restricted computability between Microsoft Windows based operating systems and non-Microsoft based work group servers. Furthermore; the tying of Windows Media Player (WMP) to the operating system excluded all potential competition in the market for media players with its ubiquitous, wide spread, Windows operating system.

The essential reasoning behind the conviction was said to be an ongoing abuse of power, unfair competition prevent innovation and harm the competitive process. The consumers are ultimately seen as ending up with less choice and facing higher prices. The Commission estimated this damage, and therefore imposed the fine of € 497.2 million.

3.3.1 Remedies

In order to restore the conditions to perfect competition, the Commission imposed the following remedies:

As regards interoperability, Microsoft is required, within 120 days, to disclose complete and accurate interface documentation, which would allow non-Microsoft work group servers to achieve full interoperability with Windows PCs and servers. This will enable rival vendors to develop products that can compete on a level playing field in the work group server operating system market. The disclosed information will have to be updated each time Microsoft brings to the market new versions of its relevant products.

As regards tying, Microsoft is required, within 90 days, to offer PC manufacturers a version of its Windows client PC operating system without WMP. The un-tying remedy does not mean that consumers will obtain PCs and operating systems without media players. Most consumers purchase a PC from a PC manufacturer, which has already put together on their behalf a bundle of an operating system and a media player. Because of the Commission's remedy, the configuration of such bundles will reflect what consumers want, and not what Microsoft imposes.

The courts decision gives Microsoft the right to offer a version of Windows operating system with the media player. However, they cannot use any commercial, technological, or contractual terms that would make the unbundled version of Windows any less attractive or performing. They believe the remedies will end the antitrust violations, that they are proportionate, and that they establish clear principles for the future conduct of the company.

3.3.2 Violation of the Sherman Act

The Justice Department's found Microsoft violating Sherman Act (1980) section 1 & 2 and they have charged Microsoft in violation of a 1995 consent decree that was aimed at opening the way for more competition in the software industry. The government wants to prevent the company from using its dominance in personal computer operating systems.

The Microsoft defendants argued that integrating Internet Explorer into Windows is "in line with its history of enhancing its operating system." (Strassel 2001) The Department of Justice, on the other hand, argues that Microsoft sees the Internet as a threat and seeks to eliminate their internet competition by freely distributing their browser, integrating it into their popular operating system.

Tying agreements of other Microsoft software products into Windows operating system, such as middleware, exclude and prohibits companies to use anything else than their products. Companies were restricted to work on one platform and excluded other software competitors or potential competitors. (Jones 2000)

The essential violation of the antitrust laws was traced back to the Sherman Act, which were still seen as sufficiently tangible. The bundling of middle ware, web browser and media player into Windows were seen as restraint of trade or commerce, and Microsoft was seen to have attempted to monopolize the market.

§ 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.

In summary we can see that any form of trust, merger, collusion or arrangement which can be seen to restrain trade or commerce shall be found guilty of violating the Sherman Act. Any contract that attempt to monopolize or combine or conspire with any other person shall be deemed guilty of a felony.

The courts could not find Microsoft guilty of any violation of the first paragraph, however, the second paragraph was violated with software products which required Windows based Operating System. This was seen to force customers to engage in a contract, saying that they will be forced to use Microsoft based products in the future.

We shall further see how these invisible "contracts" were written through bundling the software products, in the next chapter.

4 Economic theory and Bundling

This economic theory will show that the incumbent, the first company in a market, has a significant advantage compared to a new company, which have to set their quantity with respect to the incumbent, or the Stackelberg leader. This is where quantity differentiating is examined to achieve a more competitive positioning in the market, which can be seen as an alternative to bundling.

4.1 Stackelberg Leader

We have historically observed two main competitors in the market of operating systems to personal computers, Microsoft and Apple. Two competitors were one can be seen as the incumbent and the other as a follower, a Stackelberg leader and follower. (Carlton and Perloff 2004)

4.1.1 Cournot Equilibrium

Suppose that there are only two competitors in the market for PC platforms, Operating System for Personal Computers, Apple and Microsoft. The customers can choose having their systems operate under the Macintosh system or Windows system, which perfect substitutes and will exclude any use of the other alternative. The demand in the market can be noted as P=2-Q and a Marginal Cost of 1. (Martin 2001)

We can assume a Cournot reaction function, qF=(1-qL)/2, were qF is the quantity set by the Stackelberg-follower, and qL is the quantity of the Stackelberg-leader. (Martin 2001)

Then we would plug in the reaction function from our rival into our profit equation:

$$\pi = 2qL-(qL2+1-qL2/2)-qL \qquad \text{(equation 1)}$$

The incumbent will choose to produce qL=0.5 and the follower will produce qF=0.25. They will set their prices according to the demand function, P=2-Q. The incumbent will then set the price 1.5 and the follower will have to charge the price 1.75. This will generate 0.75 profits for the incumbent and 0.4375 profits for the follower. (Martin 2001)

In conclusion we can see that the incumbent obtain 71.42% more sales than the follower.

We can hereby see the advantage of being first in the market for Operating Systems, according to the Cournot model. As well as the difficulties to survive, being second actor in a market.

(Proof available in Appendix 1)

4.2 Bundling

We shall here see how bundling products can be used, strategically, to gain market power by companies, such as Microsoft. The famous economist Stigler has discussed the economic theory of reservation prices. Another paper from UCLA (2004), which focus the bundling of complementary and non-complementary products, discuss bundling and how this will not be an efficient strategy if the two products are not perfect complements.

Many products require additional features to be attractive to the consumer, such as hotel dinners or travels and transportation. There are several reasons why retailers bundle products, most often to reduce costs and make the product more eligible. Efficiency can be achieved in logistics, packaging, and transaction costs, increasing market share and sales, and improving customer service; all of which could eventually contribute to increased profitability. However, to realize this potential, it is critical for retailers to determine optimal bundle prices and quantities, and to then decide whether bundling a given set of products would be profitable or not. (McCardle 2004)

George J. Stigler was a famous economist studying bundling economics and marketing strategies, from the perspective of the customer. In Stigler's paper, Production and Distribution Theories (1946), he says that a vector of reservation prices captures customer demand information, and it is assumed that customers choose products that maximize the difference between these reservation prices and product prices. So, if a company is able to bind products, and lower the cumulated price, they will reach beneath the customer's reservation price, wh and will be facing many more customers.

We assume a company producing two goods, A and B. They have a constant marginal cost, mc^A and mc^B. As price is lower, the market shares noted by M increase for this company. The consumer has a reservation price between r^{oA} and r^{nA} for product A, were r^o is the lowest possible price and r^n the price were the costumer is not interested. The company set the price for product A as P^A and P^B for product B. Demand for product A is noted as D^A and D^B for product B.

$r^{nA}=4.5$ $P^A=5$ $mc^A=3$ $mc^{AB}=4$ $P^{AB}=8$

$r^{nB}=4.5$ $P^B=5$ $mc^B=3$

Bundling product A and product B generate lower production cost so that, $mc^{AB}=4$ and $P^{AB}=8$. This will make the product AB eligible for all the customers with reservation prices $r^{nA}=4.5$ and $r^{nB}=4.5$.

The profitability has decreased from 2 (for each product) to 3 (for both products). We could assume half the profitability as before. However, the company will be eligible for the whole A market and B market as well as the r^{nA} market and r^{nB} market. Stigler (1946)

4.2.1 Bundling Perfect Complements

According to McCardle's paper, Bundling Retail Products: Models and Analysis (2004), Stigler's theory is only possible when the products are perfect complements. A new product in the market for software is either built for the Microsoft platform or Apple platform and will not operate in the other platform. Products are always complements in the respective platform and will never exclude one another. This is why bundling has been such a profitable strategy for the information technology industry.

If demand is not independent between product A and product B. This would also mean that the reservation price for the two products is perfectly related. Preferences for product A determine preferences of product B, as shampoo and conditioner. In the case of bundled products, the firm offers the two products for price p, which has to be lower than the customers' reservation price for the two products together ($r^nA + r^nB \leq p$). We conclude that we get a lower bundled price, P^{AB} compared to p^A plus p^B, and the customer with reservations price r^{nB}, will most likely find the bundled products more eligible, and this would in turn increase Q to Q^{AB} and increase sales for the company. (McCardle 2004)

4.2.2 Bundling Non-Perfect Complements

Bundling non-complementary products will not be an efficient company strategy. McCardle show in his paper that two products, with independent demand functions, bundled and sold together, will not present any efficiency advantage.

Bundling can be used in the same way as predatory pricing. By bundling a product, with a significant market share, with another less powerful product will not necessarily increase sales for the other product. The two products could be efficiently bundled, if they were complements to each other, as discussed earlier, and raise market power for the less powerful product. (McCardle 2004)

According to McCardle, bundling non-perfect complementary products with independent demand will generate a higher price, and not necessary attract customers with reservation price r^{nB} for product B. In other words, complementary products such as software are better and more profitable to bundle. We can also assume a relatively low marginal cost in the software industry, which would mean even more profitable bundling opportunities.

5 Empirical Analysis

This is we shall conclude if bundling has benefited the consumers or harmed them in the way court decision has described. Thirty students have been interviewed about their computer knowledge and preferences. Most of the interviewed students are familiar with Microsoft and its products and have a clear perception of the software and its compatibility.

5.1 Consumer Welfare

Antitrust is often set to be compared with consumer welfare. Most often anticompetitive behaviour is rooted in price setting strategies where the lowest price setter gets the whole market. This is called predatory pricing, when the prices are set to exclude competition in the market. However, the lower prices benefit the consumers and the antitrust laws are created to protect the consumers. The risk in letting a producer set predatory prices is that the produces charge higher prices once the whole market is over taken.

The Standard Oil Trust's actions and secret transport deals helped its kerosene (paraffin oil) to drop in price from 58 to 26 cents between 1865 and 1870. Competitors might not have appreciated the company's business practices, but consumers appreciated the drop in prices. (Standard Oil 1996)

Rule of reason, which we mentioned in the background, was applied in the beginning of trials of the Microsoft case and up until the conviction in the EU court. The behaviour from Microsoft was not seen to be per se illegal, with other words, the behaviour was not meant to exclude competition, however, this was the indirect effect of this behaviour.

5.1.1 Stated Preferences

Thirty students have been interviewed about their perception and preferences about computer software. Their opinions have been compared to courts ruling and decision in the Microsoft case, essentially to see if bundling benefit them.

All students were randomly chosen at Jönköping International Business School. The students are most likely more familiar with computer software than the average person is. The survey strives to find answer to the stated hypothesis if bundled products enhance consumer benefit.

H_0: Bundled software products benefit the consumer

H_1: Bundled software products do not benefit the consumer

This research shows that 100% of the interviewed students are familiar with computers and Microsoft software that they use in their daily work regularly. Everyone feel the network to be compatible but 87% of the students think that it could be better. 80% of the students think that the software products sold together would benefit them.

Having that said, bundling perfect complements, as Microsoft computer software, benefit the consumer. This means that we cannot reject the null hypothesises that bundled software products benefit the consumer:

H_0: Bundled software products benefit the consumer

~~H_1: Bundled software products do not benefit the consumer~~

The alternative for the 20% students, not preferring bundled products, would be to hand pick each component according to their preferences. However, all of them would choose Microsoft Office components to process calculations and word processing were compatibility to the rest of the network is essential, and a fundamental assumption. Microsoft provided everything, seen as necessary, in a computer platform. During the interview the students not preferring bundled software are mostly discussing antivirus programs, which they would prefer to hand pick.

Since students unanimously found Microsoft to be their preferred platform it is hard for anyone to imagine an alternative solution.

5.2 Analysis

The interviewed students cannot possibly picture them selves in a realistic alternative solution since Microsoft has more than 90% of the market (Comline Business News 1998) (According to this survey, 100% of the market.) Students have found Microsoft to benefit them in their everyday life contrary to government officials, for example U.S. Attorney General Joel Klein who said that protecting consumers against Microsoft and ensuring that the violations are not repeated after these court convictions.

If we try to imagine Microsoft as the only Operating System available, without available substitutes, we are facing the threat of unreasonable prices. There are most certainly characteristics of "path dependency" in the market for software. We remember when the keyboards to computers were introduced, when a standard was set, and accepted by the majority, there is little chance to change the pattern. Almost every person wants to use tools they are familiar with in their line of work. Since nearly all companies, cooperation's and institutions are dependent on a computer in some way or another, they have to accept the prices for their operation to function. Microsoft have never given any indication of this hostile approach, however, the courts have probably taken every possible action to prevent the possibility for this to occur.

We could compare Microsoft's Operating System to the Swedish railways, SJ (Statens Järnvägar); let the government administrate the company so we can benefit the standardisation. Let there be one system, one establishment providing travel information and one organization to handle all travels by railway. Other competitors can join in this system, providing even more services, better travels that are more frequent and everything would ultimately benefit the consumer.

6 Conclusion

In the background, we could see that there were essentially two actions seen as anticompetitive, namely cartel arrangements and monopolistic mergers. The historical definition of violation against antitrust laws was seen when; "the party's intent or the effect his behaviour that was likely to have, considering the market context". We could later see in the judges protocol from Microsoft's court decision that; "The facts do not support the conclusion, however, that the effect of Microsoft's marketing arrangements with other companies constituted unlawful exclusive dealing under criteria established by leading decisions under (section) 1". In other words, Microsoft never participated in any action in the form of cartel arrangements and monopolistic mergers. The behaviour was never intended to affect the market per se, tying arrangements was convicted when; "Tying agreements serve hardly any purpose beyond the suspension of competition".

In the theoretical framework we could see the benefits calculated and analysed to bundle perfect complements, such as software products. In other words, there is other, more significant, advantages in bundling products in this industry other than to exclude competitors form the market. The economical calculated evidence also showed that bundling Non-Perfect Complements did not have the same gainful opportunities.

In the chapter discussing court decision and verdict, we saw Joel Klein, an U.S. Attorney General and government official, saying that it is not specific remedies the government might seek against Microsoft. "-We will look at all our options in the days ahead." He emphasized that the government's main concern is protecting consumers and ensuring "the violations are not repeated." We could further read; "dominant companies have a special responsibility to ensure that the way they do business doesn't prevent competition on the merits and does not harm consumers and innovation" said European Competition Commissioner Mario Monti. However, this empirical analysis have shown that consumers does not need to be protected, quite contrary, 80% think that application software compatibility could be better. The consumer perception of Microsoft is not a company, which prevents innovation rather than the most pioneering system.

The violation of the Sherman Act could be traced back to the bundling of the Operating System and the Internet Explorer, which had to be unbundled from the Windows with the following statement; "Microsoft distributes separately from the Windows Operating System Product in the retail channel or through Internet access providers, Internet content providers, ISVs or OEMs, whether or not for a separate or positive price." Even if the products were offered separately, there was nearly nobody willing to buy the unbundled copy. We could draw a comparison to the "Gillette case", discussed earlier, where the company distributed razors to young men for free and makes profits by selling razorblades to later loyal customers.

The consumer welfare and benefits can be long listed from Microsoft's Operation System. However, the conclusion and essentially the silver lining in courts ruling have to be seen as precautionary, so that Microsoft could not get absolute monopoly power in the market. Some judges and plaintiffs have emphasized on already caused harm to consumers, others on the potential harm against consumers and companies. Our interviews showed that 23% were willing to convert to another Operating System, which indicates that Microsoft does not have absolute monopoly on the market. There are other systems which are seen to be capable of replacing Microsoft. This is something people might not have considered, or believed in, if we were to see Microsoft in absolute monopoly power excluding all competition.

My suggestion, to an optimal solution, would be to let the European Commission and the United States Federal Government control Microsoft and the market for software. This would ideally contribute to even more compatible system, across nations. Government regulation would provide perfect information to the public, so that consumers are able to choose exactly which products they are interested in. Hence, there will be no incentive to bundle products, other than to benefit the consumer.

6.1.1 Further Reading

"Does Antitrust Policy Improve Consumer Welfare? Assessing the Evidence" Robert W. Crandall and Clifford Winston (2002)

"An Economist's Guide to U.S. v. Microsoft" Richard J. Gilert and Michael L. Katz (2001)

The Sherman Act 1890: http://en.wikipedia.org/wiki/Sherman_Antitrust_Act

The complete and final judgement in the Microsoft Case: United States vs. Microsoft Corporation: http://www.usdoj.gov/atr/cases/f4900/4909.htm

References

Bork, Robert H (1978) *"The Antitrust Paradox", page. 372-379*

Carlton and Perloff (2004) *"Modern Industrial Organization" Fourth Edition, page 430-450*

Economides, Nicholas (2001) *"The Microsoft Antitrust Case" Nicholas Economides, page 13,14,27,28,31*

Gilbert J. Richard and Katz L. Michael (2001) "*An Economist's Guide to U.S. v. Microsoft", page 25-44*

Green, Edwin M.(1978) "*Green vs. American Tobacco The First Case In U.S. History To Find A Tobacco Company Responsible For The Death Of An Individual." page 90*

Paulsson, Thomas (2001) "*A CV studie on the Willingness to Pay for Dental Insurance", page 11,15,16*

Parish , Jefferson (1984) *"Jefferson Parish Hospital Dist. No. 2 et al. v. Hyde", page 466 U.S.*

Manns, Leslie D. (1998) *"Dominance in the Oil Industry: Standard Oil from 1865 to 1911", page 167*

Martin, Stephen (2001) *"Industrial Organization" published by Oxford University Press, page 45,46,48*

McCardle K. F. (2004) *"Bundling Retail Products: Models and Analysis, University of California. McCardle K. F., K. Rajaram, C. S. Tang" page 5,6,8,26*

Standard Oil Co. of California (1949) *"Standard Oil Co. of California et al. v. United States", page.293, 305, 337*

Thorelli, Hans B (2004) *"The historical foundation of antitrust policy" Thorelli Hans B. Ahlborn, Christian page 12,13,23, 27*

Stigler, George J. (1994) *"Production and Distribution Theories", page. 95-121*

Internet links:

Black, Oliver (2005)

http://books.google.com/books/cambridge?ie=UTF-8&vid=ISBN0521847958&refid=ca-print-cambridge&q=year&submit=Go#PPA4,M1

Published by Cambridge University Press 2006

European Commission (2004)

http://www.eurunion.org/news/press/2004/20040044.htm

Published by the European Commission 2004, Retrieved 2006-10-25

Exxon (2004)

http://www.exxonmobil.com/Corporate/About/History/Corp_A_H_Kerosene.asp

Published by Exxon 2004, Retrieved 2006-12-20

Comline Business News (1998)

http://findarticles.com/p/articles/mi_m0WPB/is_1998_July_22/ai_50206343

Published by Comline Business News 1998, Retrieved 2006-11-19

Final Judgement (1998)

http://usvms.gpo.gov/ms-final2.pdf

Published by United States Government 1998, Retrived 2006-10-10

Rochet and Tirole (2001)

http://idei.fr/doc/wp/2002/platformnov26_abs.pdf

Published by Jean-Charles Rochet Jean Tirole, Retrieved 2006-11-08

Jones (2000)

http://projects.ldc.upenn.edu/TDT2000/topics/completed-research/microsoft.html

Published by Jones, Retrieved 2006-10-31

BBC news (2000)

http://news.bbc.co.uk/1/hi/business/782289.stm

Published by BBC news 2000, Retrieved 2006-10-31

Wilcox (2000)

http://news.com.com/Judge+rules+Microsoft+violated+antitrust+laws/2100-1001_3-238758.html

Published by news.com.2000, Retrieved 2006-10-31

Robert (2001)

http://news.com.com/anticompetitive+law+Microsoft+antitrust+laws/2700-600238758.html

Published by news.com.2001, Retrieved 2006-11-01

Phillip (2006)

http://www.chemarkconsulting.net/docs/articles/05biz_corner_MAY06.pdf

Published by Chemarkconsulting, Retrieved 2006-12-20

Standard Oil (1996)

http://www.history.rochester.edu/fuels/tarbell/UPTO85.HTM

Published by Rochester University, Retrieved 2006-11-05

Strassel (2001)

http://projects.ldc.upenn.edu/TDT2001/topics.html

Published by University of Pennsylvania, Retrieved 2006-12-20

US department of Justice (1998)

http://www.usdoj.gov/atr/cases/f4900/4909.htm

Published by United States Government, Retrieved 2006-10-14

US Highway (2006)

http://www.us-highways.com/sohist1911.htm

Published by US Highway 2006, Retrieved 2006-09-28

World Bank (2006)

http://info.worldbank.org/etools/docs/library/144049/Concentration_and_Separation.pdf

Published by World Bank 2006, Retrieved 2006-10-19

Appendix 1

$\pi = (2-Q)qL-qL$

$\pi = 2qL-(qL2+1-qL/2)-qL$ (equation 1)

$\partial \pi / \partial q = 2-2qL-2qL-1 = 0$

$2-2qL-2qL = 0$

$4qL=2$

$qL=0.5$

$qF=0.25$

$pL=1.5$

$pF=1.75$

$\pi L = 0.5(1.5)=0.75$

$\pi F = 0.25(1.75)=0.4375$

Appendix 2

(Questions to thirty interviewed students)

1. Do you consider yourself as familial with computers and computer software?

No	**Yes**
0	**30**

2. If you use computer software in your daily work, is it based on a Microsoft Windows Operating System?

No	**Yes**
0	**30**

3. Have compatibility, in the network, benefited you in your daily work with computers?

No	**Yes**
0	**30**

4. Which program would you prefer working with:

1. Word processing:	**MS Word 30**	**Other windows based software 0**	**Other 0**
2. Calculations:	**MS Exel 30**	**Other windows based software 0**	**Other 0**
3. Mail:	**MS Outlook 8**	**Other windows based software 22**	**Other 0**
4. Presentation:	**MS Power point 24**	**Other windows based software 6**	**Other 0**

4. Would you rather hand pick your software, compared to buying everything included in a package?

No	**Yes**
11	**19**

5. Could another operating system provide you with any missing features?

No	**Yes**
6	**23**

6. Can you imagine working with a different operating system than Microsoft?

No	**Yes**
22	**7**

7. Do you feel that all software products sold together would benefit you?

No	**Yes**
6	**24**