Microsoft: The Tying of Internet Explorer to Windows (2009)

Andrew Winterbotham
Senior Sophister

The combination of economics and law is a powerful one. In this essay, Andrew Winterbotham addresses one of the European Commission's biggest competition cases: Microsoft's abuse of market dominance in the tying of Windows and Internet Explorer. After outlining the case, the paper goes on to present arguments in favour of the European Commission's ruling. Interestingly, Andrew concludes that though the case preserves competition, it does so at the cost of customers.

1. Introduction

European industrial economic policy, in contrast to that of the US, has developed in the structure-conduct-performance paradigm (Martin, 1994). This school of thought argues that the private exercise of monopoly power is a persistent feature of many markets. It argues that this limits the effective functioning of markets, as competition from other firms may be stifled. As such, governments should implement a relatively high-level competition policy, intended to limit strategic behaviour (Martin, 1994). The objective of economic integration within the EU has even further strengthened the need for a high-level competition policy, in order to ensure integration between member states (Martin, 1994). Given the predominance of this school of thought in Europe, the Commission's actions against Microsoft are not at all surprising.

Tying, once legal in the US (Carlton and Perloff, 2005), occurs when the sale of one product is conditioned upon the purchase of another (Carlton and Perloff, 2005).

The tying product in this case would be the operating system (Windows), and the tied product, the web browser (Internet Explorer). Microsoft engaged in pure bundling, where the two products were not offered separately. The 1987 decision in the much publicized Hilti case demonstrates that tying contracts are now among the practices that the Commission considers as abuse of a dominant position (it is not the existence of a dominant position per se that is illegal, but the abuse of that position) (Martin, 1994). An abuse of a dominant position is where an undertaking in that position was used to change the market structure. Specifically, in the Microsoft case, all of the conditions under Article 102 of the TFEU outlined below were met, warranting action against Microsoft (2009 European Commission):

- the tying and tied goods represent two separate products
- the firm under investigation is dominant in the tying product market
- the firm concerned does not give consumers the choice to obtain the products separately
- the tying is likely to foreclose competition

2. Case Summary

The European case against Microsoft for tying Internet Explorer to Windows dates back to December 2007, when Microsoft's competitor, the Norwegian firm Opera Software ASA filed a complaint against Microsoft under Article 7 of Regulation No 1/2003. According to Opera, Microsoft's tying of Internet Explorer to Windows effectively prevented Opera's web browser from competing on the merits with Internet Explorer. The firm also claimed that this strategic action foreclosed competition in the market for web browsers.

Consequently, on January 14 2009, the Commission sent out a Statement of Objections to Microsoft, in which it came to the conclusion that, taking Microsoft's dominant position for client PC operating systems into account, it's tying of Internet Explorer with Windows infringes on Article 102 of the TFEU.

Downloading web browsers from the internet was deemed not to provide a feasible alternative to pre-installation. Consumers were often prevented from switching from Internet Explorer by various barriers including searching, choosing and installing a competing web browser without technical assistance. A consumer survey revealed that about two thirds of Windows users who have Internet Explorer as their main web browser do not download web browsers from the internet or are reluctant to do so. The survey also revealed an information deficit among consumers. For example, 84 percent of Windows users who use Internet Explorer as their main browser never use another browser partly due to an unawareness of other options. Microsoft's strategic tying entrenched Internet Explorer to such an extent that the competitors' actions were rendered almost pointless. For these reasons, the conclusion was reached that as a result of the tying; Microsoft's market share (in web browsers) remains much higher than that of its competitors. In other words, it was concluded that Microsoft was using its market power in operating systems (in which it had a near monopoly) to create a monopoly for itself in the web browser market (known as leveraging).

On October 7 2009, Microsoft submitted commitments, while still disputing the objections raised by the Commission. These commitments can be summarized as follows:

- Microsoft agreed to make available a mechanism in Windows 7 that

enables Original Equipments Manufacturers (OEMs) and users to turn off Internet Explorer
- OEMs would be free to pre-install any web browser as the default, to which Microsoft would not retaliate
- Microsoft agreed to distribute a choice screen software update, where users would be given the opportunity to install a competing web browser. This choice screen would also provide a link explaining how to switch off Internet Explorer
- After a review, the choice screen had to be presented in a more neutral environment, namely not with an Internet Explorer interface. Furthermore, the issue of which competing web browsers were to be displayed was to be determined by usage share, the order of which was chosen by a randomised process.

These commitments were binding for five years in order to provide sufficient time for consumers to become more informed about the web browser market, and were deemed to be sufficient for eliminating the Commission's competition concerns. Therefore, it took the view that a further investigation of the alleged infringements was unnecessary. The Commission was no longer concerned about Microsoft's potential artificial distribution advantage brought about by the tying of Internet Explorer to Windows. It also felt that the enhanced competition brought about by the commitments would substantially weaken the network effects Microsoft gained from its strategic tying. The implementation of these enhanced commitments officially brought the case to an end (2009 European Commission).

3. The Market

3.1. Market Definition

Now that the case has been summarized, we may now analyze various aspects in more detail, starting with the market definition. A market definition specifies the competing products and geographic area in which competition occurs that determines the price for a given product (Carlton and Perloff, 2005). The market definition is often essential in determining the outcome of antitrust cases. However, it should not be the only analysis taken into account, and should not become an ends in itself (Fisher, 2007).

3.2. Relevant Markets

3.2.1. Product Markets

A proper definition of the product dimension of the market should include all those products that are close demand or supply substitutes (Carlton and Perloff, 2005). The former is concerned with a change in consumer demand due to a change in the price of one good

while the latter with the change in firm supply resulting from a change in the price of one good. The relevant product markets in the Microsoft case are the markets for client PC operating systems, in which Microsoft has a dominant position, the extent of which is examined later, and the market for web browsers for client PC operating systems. An operating system is defined as system software which allows the user to interact with and control the basic functions of the PC. The most widely used PC operating systems are Microsoft Windows, Apple's Mac OS X Lion and some distributions of Linux (an open-source/free operating system) such as Ubuntu and Fedora. Web browsers are software products which allow PC users to surf the internet. The most commonly used web browsers would include Microsoft Internet Explorer, Firefox (open-source), Apple's Safari and Google Chrome (open-source).

The Commission reached the conclusion that client PC operating systems and web browsers constitute two separate product markets, on account of the specific characteristics of web browsers and the lack of realistic substitutes. This was a crucial element to the case, because, as previously stated, for tying to be an abuse of one's dominant market position under EU competition law, the tied products must be deemed entirely separate.

3.2.2. Geographic Market

The geographic limit of a market is determined by answering the question of whether an increase in price in one location substantially affects the price in another (Carlton and Perloff, 2005). On that basis, the relevant geographic market for client PC operating systems is world-wide.

3.3. Market Power

A firm is said to enjoy market power if it is profitably able to charge a price above that which would prevail in a highly competitive market (Carlton and Perloff, 2005) i.e. the firm is able to set a price above marginal cost. However, marginal cost is incredibly difficult to measure. An alternative approach is to estimate the price elasticity of the residual demand facing an individual firm (Carlton and Perloff, 2005). This measure summarizes the ability of the firm to exercise market power. This is calculated by subtracting marginal cost (MC) from price (P), and dividing by the price. This is then equal to 1 over the residual elasticity of demand, and is known as the Learner Index.

The above measure for market share is often merely hypothetical because of inadequate or non-existent data. Thus, some economists argue that, after the market has been defined, one may use market share as a proxy for market power, with a higher market share indicating greater market power (Carlton and Perloff, 2005). It is worth pointing out however that market share is a rough measure of market power at best (Fisher, 2007). Furthermore, a small market share may actually be consistent with market power if there are reasons that competitors cannot expand and a large share may simply indicate greater

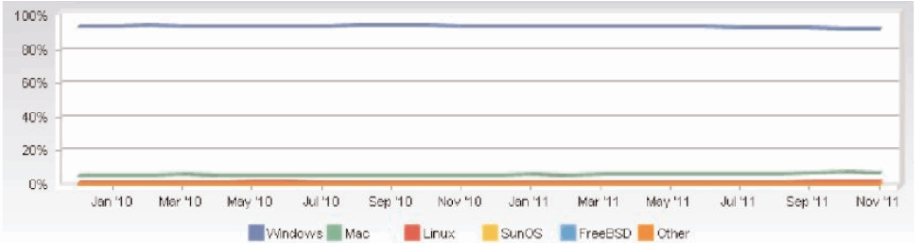
efficiency or product quality on the part of the alleged monopolist (Fisher, 2007). In Europe, an offense is described as an "abuse of a dominant position" where a "dominant position" is characterized in terms of market share (Fisher, 2007). Fisher outlines the problems this may create. Firstly, it assumes that a market can be easily and unambiguously defined and secondly, it may cause some firms to be hesitant to reach a certain threshold of market share, which could lead to inefficiency. It has even been argued that the Commission places an overemphasis on market share and that in this case, the Commission punished Microsoft simply because of its large market share alone, before even investigating whether it abused that position (Robinson, 2010)

We may also compute a concentration ratio, such as the Herfindahl-Hirschman Index (HHI) (Hirschman, 1964). This index would be close to zero when there are a large number of firms: and 1 under monopoly (Ferguson and Ferguson, 1988). Even though competition authorities are currently moving away from this index as a measure of market concentration, it shall be computed nonetheless using data from the 2009 market shares in operating systems, illustrated in Table 1. This was computed using the top four firms in the industry by market share, which is common practice (Shepard, 1997). The result is a figure of 0.88, indicating a very high degree of concentration. Perhaps the Commission was correct to investigate the behaviour of Microsoft, as it certainly had a monopoly in operating systems, and still does, to which it can use to extend its monopoly into web browsers. However, the overall effect of the Commission's decision on the market shares of Microsoft has been minimal, which is illustrated below in Tables 1-4 and Figures 1 - 2.

3.3.1. Operating System Market Shares

As a market share of over 50% is deemed to be significant (Carlton and Perloff, 2005), we may certainly conclude that Microsoft held a dominant position in the market at this time, if not a exercising a monopoly. As the below diagram illustrates, this has changed little in the last two years.

Figure 1: Operating Systems Market Share Trend (December 2009 – December 2011)



(Source: https://marketshare.hitslink.com/operating-system-market-share.aspx)

Table 1: Operating System Market Shares (December 2009)

Operating System	Total Market Share
Windows	93.75%
Mac	5.20%
Linux	1.03%
FreeBSD	0.01%
SunOS	0.01%

(Source: https://marketshare.hitslink.com/operating-system-market-share.aspx)

Table 2: Operating System Market Shares (December 2011)

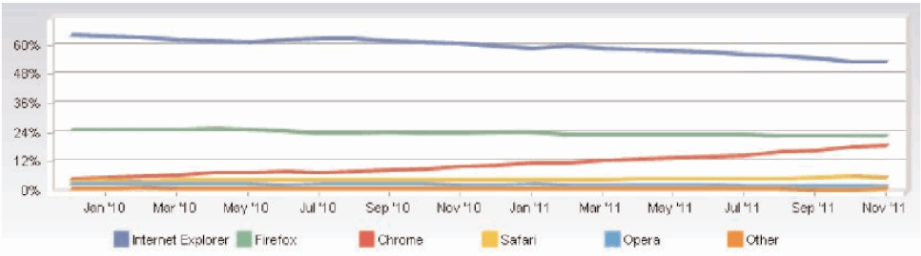
Operating System	Total Market Share
Windows	92.23%
Mac	6.46%
Linux	1.31%
SunOS	0.00%

(Source: https://marketshare.hitslink.com/operating-system-market-share.aspx)

3.3.2 Browser Market Shares

The fall in market share from 2009 to 2011 most certainly occurred as a result of the rulings, as at the time it was concluded that Microsoft's unusually large market share in web browsers was partly a result of it tying Internet Explorer to Windows. One startling thing to note is the surprising lack of change in the market shares in the industry given the notoriously rapid pace of change and innovation in the technology sector. Microsoft's comparatively lower browser market share may be evidence verifying their defence that people can, and do indeed download free browsers from the web, possibly undermining the Commission's argument (Robinson, 2010).

Figure 2: Browser Market Share Trend (December 2009 - December 2011)



(Source: https://marketshare.hitslink.com/operating-system-market-share.aspx)

Table 3: Browser Market Shares (December 2009)

Browser	Total Market Share
Microsoft Internet Explorer	63.69%
Firefox	25.02%
Chrome	4.71%
Safari	3.80%
Opera	2.40%
Proprietary or Undetectable	0.23%
Konqueror	0.04%
Flock	0.03%
ACCESS NetFront	0.02%
Mozilla	0.02%
Obigo	0.01%

(Source: https://marketshare.hitslink.com/operating-system-market-share.aspx)

Table 4: Browser Market Shares (December 2011)

Browser	Total Market Share
Microsoft Internet Explorer	52.64%
Firefox	22.14%
Chrome	18.18%
Safari	5.00%
Opera	1.55%
Proprietary or Undetectable	0.24%
Mozilla	0.09%
Flock	0.03%
ACCESS NetFront	0.01%
Konqueror	0.01%
Obigo	0.01%

(Source: https://marketshare.hitslink.com/operating-system-market-share.aspx)

4. Motivations for Tying

The existing literature on tying/bundling falls into two distinct categories: the price discrimination theory and the leverage theory (Chen, 1997). The former view, which first appeared in literature in 1968 (Stigler, 1968), views tying as a strategy to engage in price discrimination (Chen, 1997). According to the leverage theory, on the other hand, which is quite elegantly described in a 1990 paper, tying is viewed as a strategy that enables a firm with monopoly power in one market to leverage this power to foreclose sales in, and thereby monopolize a second market (Whinston, 1990). Whinston's analyses focus on the fact that tying is used to induce exit in the tied market and may also deter entry by efficient firms (Carlton and Waldman, 1998).

It has been demonstrated that a firm can never gain from (pure) bundling when the secondary market is competitive (i.e. perfect competition) (Schmalensee, 1982). However, the market for web browsers is not perfectly competitive (in fact it can be characterized as an oligopoly) and so Microsoft stood to gain from its strategic tying (Whinston, 1990). Bundling allows firms to differentiate their primary products and thus gain market share in their primary market also (in this case the primary market would be client PC operating systems) (Chen, 1997).

The Commission took the view that Microsoft's actions created artificial incentives for developers and designers to create applications primarily for Internet Explorer.

Thus, Microsoft was attempting to create network externalities. The main reason why Microsoft engaged in tying was possibly to counter the threat posed by the large-scale deployment of web applications, which threatened to make conventional operating systems such as Windows obsolete. This was Microsoft's attempt to foreclose the competing browsers, as no applications written specifically for Internet Explorer would allow users to switch browsers or even the underlying operating system (2009 European Commission).

Microsoft may be let off the hook to a certain extent though. Bill Gates firmly believed that, as a matter of legal principle, a company should have the right to add features to a product even when that product monopolized the market (Allen, 2011). Moreover, when there is little room for competing firms to differentiate their product through advertising or quality choices, tying may be the only strategic option (Chen, 1997). It is also postulated that bundling may create real convenience for consumers (Chen, 1997). This is certainly true in the Microsoft case because, as has been discussed, many users do not even know how to download a web browser. Furthermore, one must have a web browser in order to browse the web to download an alternative one. It would be incredibly tedious for consumers to buy a web browser on a Compact Disk (CD) and then install it manually. It would also be incredibly costly for the firm to produce it on a CD and then ship them to consumers. This relates to one of the economic motivations for tying: there are efficiency gains to be enjoyed. In this case (as well as in the Messenger case), Microsoft's defence was threefold. First, tying enhances efficiency. Second, the Microsoft product is better and better marketed and finally, users could easily download an alternative product (Lee, 2009).

5. Conclusion

This paper was intended to give a broad, objective overview of the Microsoft browser tying case. First of all, the paradigm of European competition law was outlined, followed by a brief summary of the case. Individual aspects of the case and its rulings were then analyzed in greater detail. The market was defined in section three. Then, in section 4, the general motivations for tying were contextualized by analyzing the reason(s) why Microsoft engaged in tying. The result of the case was certainly a resounding victory for the Commission, and, while it was generally objective and should produce desirable results for consumers, several objections have been raised. Microsoft's commitments should lead to increased competition and thus increased choice for consumers. Furthermore, this should reduce prices and increase quality leading to increased consumer surplus. However, one may ask whether the ruling benefits competitors more than consumers. If a browser increases a company's market share, its revenue will obviously increase. This is beneficial for the competitors, but has no effect on consumers. Furthermore, the Commission's analysis merely focuses on 'likely' effects on competition, not on 'actual' effects; the Com-

mission argued that the tying 'was liable' to foreclose competition, but it failed to analyze whether such foreclosure had had the effects described (Robinson, 2010).

References

Case Comp/C-3/39.530 Microsoft (tying) 2009 European Commission.

Paul Allen. *Idea Man: A Memoir by the co-founder of Microsoft*. Portfolio/Penguin, 1st edition, 2011.

Dennis W. Carlton and Jeffrey M. Perloff. *Modern Industrial Organisation*. Pearson: Addison-Wesley, 4th edition, 2005.

Dennis W. Carlton and Michael Waldman. The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries. *NBER working paper series*, 1998.

Yongmin Chen. Equilibrium Product Bundling. *The Journal of Business*, 70(1):85 – 103, 1997.

Paul R. Ferguson and Glenys J. Ferguson. *Industrial Economics: Issues and Perspec-tives*. Macmillan, 2nd edition, 1988.

Franklin M. Fisher. Economic Analysis and Bright Line Tests. *Journal of Competition Law and Economics*, 4(1):129–153, 2007.

A. O. Hirschman. The Paternity of an Index. *American Economic Review*, 54(1964): 761–2, 1964.

Myoung J. Lee. Measuring the usage effects of tying a messenger to windows: a treatment effect approach. *Journal of the Royal Statistical Society*, 173(Part 1):237– 253, 2009.

Steven Martin. Industrial Economics: *Economic Analysis and Public Policy*. Macmillan, 2nd edition, 1994.

Jeremy Robinson. The Microsoft Browser Case: Why The Commission's Decision Fails to Convince. *Journal of European Competition Law and Practice*, 1(4):317– 319, 2010.

Richard Schmalensee. Commodity bundling by single product monopolies. *Journal of Law and Economics*, 25(April):67 – 71, 1982.

William G. Shepard. *The Economics of Industrial Organization*. Prentice-Hall, 4th edition, 1997.

G. J. Stigler. *A note on block booking, The Organization of Industries*. Irwin, 3rd edition, 1968.

Michael D. Whinston. Tying, foreclosure and exclusion. *American Economic Review*, 80(September):837 –