Better Together:
The Evolution of Tying Theory and Doctrine in EU Competition Law and US Antitrust Law

by

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Abstract

The article analyzes the economic theories of tying and tying case law in EU competition law and US antitrust law. The article aims to identify the economic rationales motivating the use of tying practices and appraises their implications to competition policy. The question is not only whether the law is consistent with economic theory or not, but whether economic theory can meet the demands of the law. Moreover, the article compares case law from the US and the EU and links the case law approaches to economic theory. The analysis of the US and EU experience reveals that regulation of tying has a long and rich history. The article argues that tying doctrine has changed in recent years. Today the benefits of tying are better understood.

1 Tying, the Leverage Theory and Case Law

1.1 The Definition of Tying

Tying is an old sales strategy where distinct products, which are complements in use, distribution or production, are offered in combination. Tying is a classical competition law problem, but has in recent years attracted renewed interest as the practice is widely used in many high-technology industries. The benefits and drawbacks of tying have been debated, in particular, in competition authority and court cases relating to *Microsoft's activities*[1], where allegations of anticompetitive tying have played a major role. Ultimately, many commentators have argued that existing rules on tying are obsolete and the field is in desperate need of modernization.[2]

Although the words tying and bundling are often used interchangeably, tying, mixed bundling and pure bundling are separate concepts. Tying takes place when customers are required to buy product B when they buy product A. Product A is referred to as the tying product and product B the tied product. Bundling in turn means that the seller of product A adds product B to the package at no separate charge. In mixed bundling A and B are separately available, but if they are bought together, a discount is offered. Pure bundling refers to a situation where both products A and B are only offered in a bundle. Shoe sales constitute a prime example of pure bundling. Shoes are always sold in pairs. Set menus in restaurants, in turn, are an example of mixed bundling as the menus tend to be cheaper than purchasing the individual component dishes *à la carte.*[3]

The main difference between tying, on the one hand, and mixed bundling, on the other, is that in mixed bundling the seller does not coerce the customer to buy the bundled product. However, the differences between pure bundling, mixed bundling and tying are not always clear-cut, as even mixed bundling may, de facto, coerce the buyer. If the prices charged for the individual products are high in relation to the bundle price and the consumer needs almost all the products, the buyer may, in effect, have no reasonable option but to buy the bundle.[4] Nevertheless, bundled discounts lack the one main negative aspect of tying and pure bundling, namely that the customer cannot buy the tied product separately.

Tying can be implemented with several techniques. Contracts are one prevalent technique. The seller may sell product A only if the buyer makes a contractual commitment to purchase the prod-

1 United States v. Microsoft Corp., 253 F.3d 34 (D.C. Cir. 2001); Microsoft v. Commission. Commission Decision Case 3/37.792. March 24, 2004; Case T-201/04 Microsoft v. Commission. September 17, 2007

2 Evans, David S.: Tying: The Poster Child for Antitrust Modernization (November 2005). Available at SSRN: http://ssrn.com/abstract=863031 or http://dx.doi.org/10.2139/ssrn.863031, p. 2., visited November 27, 2013.

3 Bishop, Simon & Walker, Mike: The Economics of EC Competition Law: Concepts, Application and Measurement. 3rd ed. London. Sweet & Maxwell. Thomon Reuters, 2010, 276; Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings. 2009/C 45/02, paragraph 48.

4 Langer, Jurian: Tying and Bundling as a Leveraging Concern under EC Competition Law. Alphen aan den Rijn. Kluwer Law International, 2007, 5.

uct B as well. Consequently, tying may amount to refusal to supply, if the buyer is unable to buy one of the products separately. Second, tying may be technical. In technical tying, the component products are technically integrated so that it is impossible or impractical to separate them. Finally, certain pricing practices may amount to tying, if the joint price of products A and B is so attractive that there are no incentives to buy products separately.[5]

Almost all ties comprise a set of complementary products. Complementarity may be a function of production or consumption related factors. If it is more efficient to produce products together, the products are complements in production, though they still may be used separately. If a customer is likely to utilize the products together, they are said to be complements in utilization. Complements are perfect, if each item is worthless except if not used with the other. For example, mobile phones require chargers and vice-versa.[6]

1.2 The Leverage Theory and Arguments against Allowing Tying

In order to understand how and why tying and bundling practices are regulated, it is necessary to analyze the theories that motivate their legal treatment. These theories are varied. They provide different perspectives to the application of law in tying cases and different answers to the question whether tying is a defensible practice.

Leverage theory is perhaps the most often utilized theory in the history of antitrust. The theory views tying with suspicion. Under the theory, tying is held to be per se detrimental to competition. The base case is that a company with market power in a market may use tying to leverage its market power in a second market to, possibly, monopolize that market.[7] This is called offensive leverage. As a result of the reduced competition, the dominant company is able achieve higher profits than by selling each product separately.[8] Moreover, market power is used to force customers to buy an unwanted bundle that they would not otherwise take, and which gives to the seller an unearned advantage over competitors in the tied product market.

Under the leverage theory, the undesirability of leverage has traditionally not been based on its exclusive or foreclosure effects, but, rather, on the assumption that the tying monopolist will, over

5 Ahlborn, Christian & Bailey, David & Crossley Helen: An Antitrust Analysis of Tying: Position Paper. GCLC Research Papers on Article 82 EC. July 2005, 166-216. http://www.coleurope.eu/content/gclc/documents/GCLC%20Research%20Papers%20on%20Article%2082%20EC.pdf, pp. 168-169, visited January 15, 2010.

6 Hovenkamp, Herbert J.: Antitrust and Nonexcluding Ties (October 1, 2012). U Iowa Legal Studies Research Paper No. 12-36. Available at SSRN: http://ssrn.com/abstract=2143869 or http://dx.doi.org/10.2139/ssrn.2143869, p. 2, visited November 27, 2013.

7 Whinston, Michael D.: Tying, Foreclosure, and Exclusion. 80 American Economic Review 837 (1990).

8 Bishop, Simon & Walker, Mike: The Economics of EC Competition Law: Concepts, Application and Measurement. 3rd ed. London. Sweet & Maxwell. Thomon Reuters, 2010, 277.

time, extract higher prices from consumers than would be attainable in a competitive market.[9] The proponents of the leverage theory argue that in most cases tying is as blatantly anticompetitive and consequently, should, treated as illegal *per se*. The use of a *per se* rule entails that its proponents think that it is better to condemn all tying cases than to try to separate harmful tying from beneficial tying.[10]

Today, the main argument against of tying is that the practices exclude competition.[11] The proponents of the theory fear that tying unreasonably limits rivals' opportunities to compete, in particular, in the tied product market. Indeed, tying can be particularly anticompetitive when a dominant company strategically uses tying practices in order to foreclose rivals from the tied product market. In the tied market, tying may constitute a significant entry barrier. If a company has market power in two goods, rivals with only one of the goods in their portfolio may be severely handicapped and only competitive if they enter both the tying and the tied market.[12] Further, research has suggested that a company selling a bundle of complementary products has a considerable advantage over competitors who sell these products individually and and the bigger the size of the bundle is, the bigger the advantage it conveys is.[13]

Finally, it has been argued that the foreclosure on the tied market today may be used to protect the current market power from future erosion. This is called defensive leverage. If the tied product could become a substitute to the original product in the future, leveraging the tied product market can protect a company's position in the tying market.[14]

9 Hovenkamp, Erik N. and Hovenkamp, Herbert J.: Tying Arrangements (May 14, 2012). U Iowa Legal Studies Research Paper No. 12-28. Available at SSRN: http://ssrn.com/abstract=1999063 or http://dx.doi.org/10.2139/ssrn.1999063, p.5, visited November 27, 2013.

10 Evans, David S. & Padilla, A. Jorge & Ahlborn, Christian: The Antitrust Economics of Tying: A Farewell to Per Se Illegality. (April 21, 2003). Antitrust Bulletin, 2003. Available at SSRN: http://ssrn.com/abstract=381940 or doi:10.2139/ssrn.381940, p. 65, visited January 21, 2010.

11 Hovenkamp, Erik N. and Hovenkamp, Herbert J.: Tying Arrangements (May 14, 2012). U Iowa Legal Studies Research Paper No. 12-28. Available at SSRN: http://ssrn.com/abstract=1999063 or http://dx.doi.org/10.2139/ssrn.1999063, p. 9, visited November 27, 2013

12 Devlin, Alan J., A Neo-Chicago Perspective on the Law of Product Tying (2007). American Business Law Journal, Vol. 44, No. 521, 2007. Available at SSRN: http://ssrn.com/abstract=1429864, p. 4, visited January 20, 2010.

13 Nalebuff, Barry J., Competing Against Bundles (August 20, 2000). Yale School of Management Working Paper No. ES-02. Available at SSRN: http://ssrn.com/abstract=239684 or doi:10.2139/ssrn.239684, visited Novmber 12, 2013.

14 Këllezi, Pranvera: Rhetoric or Reform: Does the Law of Tying and Bundling Reflect the Economic Theory? (November 24, 2009). ARTICLE 82 EC: REFLECTIONS ON ITS RECENT EVOLUTION, Ezrachi, ed., Hart Publishing, 2009. Available at SSRN: http://ssrn.com/abstract=1512583, pp. 4, 6, visited December 2, 2013.

1.3 Tying Doctrine in US Case Law

In US antitrust law, section 1 of the Sherman Act, which concerns agreements in restraint of trade, has traditionally constituted the primary legal basis for contesting tying. Tying can, nevertheless, be challenged under section 2 of the Sherman Act, which makes it illegal to monopolize, under section 3 of the Clayton Act, which prohibits exclusive arrangements that may substantially lessen competition, and under section 5 of the FTC Act, which prohibits unfair methods of competition.

During the early 20th Century, US courts applied a *per se* rule to tying and held that tying serves no legitimate business purpose.[15] Indeed, as Justice Frankfurter argued in its oft-cited dicta: "*Tying agreements serve hardly any purpose beyond the suppression of competition.*"[16] Under the early approach, courts found that a firm was engaged in illegal tying in only three-requisites were met. First, the seller had to have"*sufficient economic power*" in the tying product market and the tying practice had to affect "*a not insubstantial amount of interstate commerce*" in the tied product market. Third criterion for holding a practice tying, namely that two separate products must be tied together, was often addressed in an ad hoc manner as the courts lacked a systematic standard.[17]

A number of cases suggest that "sufficient economic power" was presumed from facts that would not warrant such a conclusion today. For example, in *International Salt*[18] a patent right was held to give sufficient market power to the seller to trigger the prohibition of tying the patented product with unpatented products. Further, the possible efficiency gains were not analyzed.[19] Early cases suggest that tying was viewed with extreme suspicion and it was deemed illegal without analyzing in detail the actual effects the practices had.

The early doctrine was modified in *Jefferson Parish*[20]. The case remains the leading tying case in US antitrust law. In the case, East Jefferson Hospital had an exclusive contract with Roux & Associates to provide anesthesiology services to the hospital's patients. In 1977, an anesthesiologist, who had unsuccessfully applied for admission to the medical staff of the hospital, claimed that the contract between the East Jefferson Hospital and Roux & Associates violated antitrust law. The anesthesiologist sued the hospital under, among others, Section 1 of the Sherman Act.

The Supreme Court unanimously held that the Sherman Act 1 was not breached, but there was a disagreement on the reasons. The four-judge minority voted for the introduction of a rule of

15 See, for example, Times-Picayune Publishing v. United States, 345 U.S. 594 (1953); United States Steel Corp. et al v. Fortner Enterprises, 394 U.S. 495 (1969).

16 Standard Oil Co. of California v. United States, 337 U.S. 293, 306 (1949).

17 See, for example, Northern Pacific Railway Co. et al. v. United States, 356 U.S. 1 (1958).

18 International Salt Co., Inc. v. United States 332 U.S. 392 (1947).

19 Evans, David S. & Padilla, A. Jorge & Ahlborn: The Antitrust Economics of Tying: A Farewell to Per Se Illegality. (April 21, 2003). Antitrust Bulletin, 2003. Available at SSRN: http://ssrn.com/abstract=381940 or doi:10.2139/ssrn.381940, p. 10, visited January 21, 2010.

20 Jefferson Parish Hospital District No. 2 v. Hyde, 466 U.S. 2 (1984).

reason[21], but the majority opined that it was "*far too late in the history of our antitrust jurisprudence to question the proposition that certain tying arrangements pose an unacceptable risk of stifling competition and therefore are unreasonable 'per se'*.[22] The majority did not, however, deny that tying could in some instances be pro-competitive. Rather, it appears that deference to precedent prevented the application of the rule of reason to tying.[23] Although the Supreme Court held that the hospital did not have sufficient market power in the market and, thus, the tying practice was allowed, an opportunity to review the tying doctrine arose.[24]

The Supreme Court formulated a four-part test to idenfity prohibited tying practices. The test has since been called the modified *per se* rule. Under the test, prohibited tying requires

1) two separate products;
2) that are tied and the consumers have no option to choose between the products;
3) and the seller has sufficient market power in the tying product; and
4) the tying affects a not insubstantial volume of commerce.

However, most importantly, the Supreme Court recognized that under some circumstances tying may provide benefits to consumers.[25]

The modified *per se* rule was confirmed in *Eastman Kodak v. Image Technical Services*[26]. In the case, the accusation was that Kodak had illegally tied the sale of its photocopier spare parts to the purchase of Kodak photocopiers and accompanying repair services. The district court granted a summary judgment for Kodak, which was reversed by the Court of Appeals for the Ninth Circuit. The Supreme Court held that Kodak had, in fact, engaged in tying. The court reached the conclusion even if Kodak did not have sufficient market power in the market for photocopiers as such. It was, nevertheless, sufficient that the firm dominated the market for the brand's spare parts and the servicing of the machines. The customers were locked into buying Kodak spare parts after buying a photocopier because switching costs were prohibitively high in relation to the aftermarket value of a photocopier. Thus, Kodak could force its customer pay monopoly prices for the tied spare parts or services. The Supreme Court again applied the modified *per se* rule. However, the impact

21 Ibid., pp. 32-34.

22 Ibid., p. 9.

23 Evans, David S.: Tying: The Poster Child for Antitrust Modernization (November 2005). Available at SSRN: http://ssrn.com/abstract=863031 or http://dx.doi.org/10.2139/ssrn.863031, p. 2., visited November 27, 2013.

24 Jefferson Parish Hospital District No. 2 v. Hyde, 466 U.S. 2, 26-27 (1984).

25 "It is clear, however, that not every refusal to sell two products separately can be said to restrain competition. If each of the products may be purchased separately in a competitive market, one seller's decision to sell the two in a single package imposes no unreasonable restraint on either market, particularly if competing suppliers are free to sell either the entire package or its several parts... Buyers often find packages sale attractive; a seller's decision to offer such packages can merely be an attempt to compete effectively – conduct that is entirely consistent with the Sherman Act." Ibid., pp. 11-12.

26 Eastman Kodak v. Image Technical Services, Inc. et al., 504 U.S. 451 (1992).

of tying was not analyzed in the specific circumstances of the case. Nevertheless, a minority of the judges was of the opinion that the rule of reason approach should have been applied.[27]

1.4 Tying in EU Case Law

In EU competition law, tying has been addressed as abuse of dominant position (Article 102 TFEU), although tying may also fall under the scope of unlawful restrictive agreements (Article 101 TFEU). In particular, the wording of Articles 101(1)(e) and 102(d) TFEU suggests that the anticompetitive nature of tying has already been taken into account in the provisions, because the act of tying is treated as a possible violation. Both provisions prohibit a conduct that involves "*making the conclusion of contracts subject to acceptance by the other parties of supplementary obligations which, by their nature or according to commercial usage, have no connection with the subject of such contracts.*"

Thus far there have been only few tying cases in the EU. There are three contractual tying cases (*British Sugar, Hilti, and Tetra Pak II*) and one case involving technological tying (*Microsoft*). Before the late 1980s, tying was viewed with suspicion. *British Sugar*[28] was one of the first EU Commission investigations that targeted tying. A sugar merchant Napier Brown had complained that British Sugar abused its dominant position in the UK to drive Napier Brown out of the UK sugar retail market. Napier Brown argued that British Sugar engaged in prohibited tying as the firm supplied sugar to its customers only if they allowed the firm to deliver the sugar. The Commission held that the practice was illegal tying, because it eliminated all competition in the delivery market. In particular, the mere fact that British Sugar had mopolised a separate market activity was sufficient to find anti-competitive effects. Thus, the case indicates that the Commission employed a very strict approach to tying.

One of the most important tying cases in the EU competition law involved *Hilti*[29], Europe's largest manufacturer of nail guns. The case involved the supply of nail guns, and related nails and cartridge strips, which were particularly manufactured for Hilti's nail guns. Competing nail producers complained to the Commission that Hilti had abused its dominant position by limiting their entry into the market for Hilti-compatible nails, by tying the sale of nails to the sale of cartridge strips used in Hilti's nail guns. Hilti argued that it delivered powder-actuated fastening guns, which constituted one integrated system, and for this reason it no longer delivered any separate components. The Commission rejected this argument and held that Hilti had a dominant position in the markets for nail guns, Hilti-compatible nails, and cartridge strips. The Commission held that Hilti's practice constituted an abuse of dominant position and excluded independent nail makers from the markets. Moreover, the practice exploited consumers as they were left with no alternative source of nails, which exploited them.

27 Justice Scalia, O'Connor and Thomas dissented and proposed the rule of reason analysis.
28 Napier Brown v. British Sugar. Commission Decision 88/519/EEC, 1988 O.J. (L 284) 41.
29 Eurofix-Bauco v. Hilti. Commission Decision 88/138/EEC, 1988 O.J. (L 065) 19.

Hilti appealed to the General Court[30] and claimed that safety and reliability concerns motivated its business practices. The court rejected the argument, and held that it was inappropriate for a dominant company to take action to eliminate competing products, which the company considered dangerous or of lesser quality than its own products. The General Court pointed out that the legislature carried the primary responsibility for regulating product safety and safety regulation should not be carried out by unilateral measures of companies in a dominant position. Thus, Hilti's tying practices constituted an excessive measure, in particular, since the company had been unable to prove that other nail manufacturers' nails were, in fact, dangerous in its tools. Hilti appealed but the European Court of Justice upheld the earlier decision.[31]

Another important tying case is *Tetra Pak II*[32]. Tetra Pak obliged the buyers of its machines to also buy cartons from it. In addition, Tetra Pak reserved to itself an exclusive right for the maintenance, reparation, and the supply of spare parts. Tetra Pak argued that it offered an integrated-product, but the Commission and the General Court[33] found that this conduct constituted an abuse of dominant position. Tetra Pak's arguments for the protection of public health were rejected with reference to the ruling in *Hilti.* The courts held that other less restrictive means, such as legislation, capable of guaranteeing public health existed.

In Tetra Pak, the concept of "commercial usage" raised questions. Tetra Pak claimed that the tying of machines and cartons was not illegal, because it was "commercial usage" to connect the products and their combined sale promoted efficiency. However, this argument was not accepted, since there were independent carton manufacturers that were specialized in these products and which did not simultaneously manufacture machines.

Tetra Pak appealed to the European Court of Justice[34] which upheld the earlier decision. In particular, it held that a commercial usage acceptable in a competitive market may not be accepted in a market where competition is restricted, unless there is an objective justification for the usage. Thus, in the case of a dominant company it may be abusive to tie the sales of products - even though this forms commercial usage in the market or there is a natural link between the two products.

The ruling is dubious from an economic point of view: if both companies with and without market powers tie certain products together, the likely explanation is that this practice either cuts costs or enhances value to consumers.[35] Otherwise, companies would not have survived in competitive markets. Even though holding a dominant position confers a special responsibility

30 Case T-30/89. Hilti AG v. Commission [1990] ECR II-163.
31 Case C-53/92P. Hilti AG v. Commission [1994] ECR I-667.
32 Tetra Pak v. Commission (Tetra Pak II) . Commission Decision 92/163/EEC, 1992 O.J. (L 072) 1.
33 Case T-83/91. Tetra Pak II [1994] ECR II-755.
34 Case C-333/94 P Tetra Pak International SA v Commission [1996] ECR I-5951.
35 Geradin, Damien & Ahlborn, Christian & Denicolò, Vincenzo & Padilla Blanco, Atilano Jorge: DG Comp's Discussion Paper on Article 82: Implications of the Proposed Framework and Antitrust Rules for Dynamically Competitive Industries (March 2006). Available at SSRN: http://ssrn.com/abstract=894466 or http://dx.doi.org/10.2139/ssrn.894466, p. 40, visited November 27, 2013.

on the dominant undertaking, forbidding it from using a common commercial usage that its competitors use may be excessive.

The lessons to be learnt from *Hilti* and *Tetra Pak II* are that dominance was no longer presumed as before, and the requirement of market power was analyzed in detail. There were signs that in theory EU courts could perhaps accept tying practices if they could be justified. Hilti's and Tetra Pak's safety and quality concerns were not, however, such reasons. Since the rulings in *Hilti* and *Tetra Pak II*, the Commission has confirmed that in principle exclusionary conduct may, for example, be considered objectively necessary for health or safety reasons related to the nature of the product in question. However, the Commission has also stressed that under most circumstances public authorities should set and enforce such safety standards. Therefore, a dominant undertaking should not, ordinarily, take steps to exclude competing products which it considers dangerous or inferior to its own product.[36]

2 Arguments in Favor of Tying

2.1 The Three Challenging Theories

2.1.1 The Chicago School and the Single Monopoly Profit Theorem

Since the 1990s, theories that advocate the per se prohibition of tying have been under sustained attack both in the US and the EU. However, the major outline of the critique was well known long before 1990s. In particular, the Chicago School attacked the leverage theory already in the 1970s and argued that the theory contained a serious logical flaw. The Chicago School based this argument on the single monopoly profit theorem. The theorem posits that a dominant company can achieve the benefit of its monopoly position only once in the tying product market and thus, it cannot extend its monopoly power to the tied product market.[37]

To the contrary, the Chicago argued that monopolizing the other market could lead to lower profits and consequently, dominant companies rarely have the economic incentives to leverage their market power. In fact, a dominant company may have an interest in keeping the tied market competitive, since the increase in demand for the tied product increases the demand for the tying product. Consequently, the leverage theory leads to erroneous conclusions when the tying

36 This was later held in the Commission's Guidance. See Communication from the Commission. Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings. (2009/C 45/02), paragraph 29.

37 Ahlborn, Christian & Bailey, David & Crossley Helen: An Antitrust Analysis of Tying: Position Paper. GCLC Research Papers on Article 82 EC. July 2005, 166-216. http://www.coleurope.eu/content/gclc/documents/GCLC%20Research%20Papers%20on%20Article%2082%20EC.pdf, p. 173, visited January 21, 2010. Evans, David S. & Padilla, A. Jorge & Ahlborn, Christian: The Antitrust Economics of Tying: A Farewell to Per Se Illegality. (April 21, 2003). Antitrust Bulletin, 2003. Available at SSRN: http://ssrn.com/abstract=381940 or doi:10.2139/ssrn.381940, pp. 47-49, visited January 21, 2010.

product is monopolized and the tied product remains competitive. The Chicago School argued that the single monopoly profit theorem also applied to products the demand for which is both independent and complementary.[38]

The Chicago School provides an alternative explanation for tying practices: they are primarily a vehicle of beneficial price discrimination, which can increase output and allocative efficiency.[39] In particular, *Stigler*[40] has argued that tying enables companies to capture more consumer surplus from consumers who have different valuations on the separate goods. Indeed, if there is a need to reduce heterogeneity in customer valuations, tying may be a good strategy.[41]

Moreover, the Chicago School emphasizes many other benefits that tying may have. For example, there may be economic efficiencies such as lower production, distribution and transaction costs if tying is used. Tying may also reduce the costs of finding the best product combinations and sometimes a combined product can be worth more to consumers more than the individual components. In addition, tying may help to improve product quality and lower prices if tying and tied products are complements.[42] Therefore, the Chicago School argues that tying should be treated as legal *per se*, since the vast majority of tying practices will, in fact, be beneficial for competition.

2.1.2 Post-Chicago Theories

The Post-Chicago theories, in turn, argue that the assumptions the Chicago school made do not hold. If competition in the tied product market is imperfect, tying and bundling can exclude competitors and soften price competition.[43] The Post-Chicago theories recognize the majority of the Chicago School arguments, but also point out that the single monopoly profit theorem is too general and holds only under restrictive assumptions. In particular, the single monopoly profit

38 Ibid.

39 Bork, Robert H.: The Antitrust Paradox: A Policy at War with Itself. New York. Free Press, 1978, 376-378, 396-398.

40 Evans, David S. & Salinger, Michael: Why Do Firns Bundle And Tie? Evidence from Competitive Markets And Implications for Tying Law. 22 Yale J. on Reg. 37, 49, (2005) referring Stigler, George: A Note on Block Booking. The Organisation of Industry 165 (1968).

41 Nalebuff, Barry: Bundling, Tying, and Portfolio Effects. DTI Economics Paper no. 1. February 2003. http://www.bis.gov.uk/files/file14774.pdf, p. 34, visited January 12, 2010.

42 Ahlborn, Christian & Bailey, David & Crossley Helen: An Antitrust Analysis of Tying: Position Paper. GCLC Research Papers on Article 82 EC. July 2005, 166-216. http://www.coleurope.eu/content/gclc/documents/GCLC%20Research%20Papers%20on%20Article%2082%20EC.pdf, pp. 170-173, visited January 15, 2010; Evans, David S. & Padilla, A. Jorge & Ahlborn, Christian: The Antitrust Economics of Tying: A Farewell to Per Se Illegality. (April 21, 2003). Antitrust Bulletin, 2003. Available at SSRN: http://ssrn.com/abstract=381940 or doi:10.2139/ssrn.381940, pp. 42-46, visited January 21, 2010.

43 Bishop, Simon & Walker, Mike: The Economics of EC Competition Law: Concepts, Application and Measurement. 3rd ed. London. Sweet & Maxwell. Thomon Reuters, 2010, 290-291.

theorem may fail if the tied market is not perfectly competitive.[44] For example, *Whinston*[45] has argued that a company that has market power in both the tying and tied markets may use tying in order to deter potential competitors from entering the tied market if economies of scale are required. In particular, if the tied product does not require the use of the tying product, there may be cases where tying is used to increase profits in the tied product market.

Instead of focusing solely on a static perspective of markets and short term profit maximization, the Post-Chicago theories argue that there is a need to take into account the dynamic effects of tying and adopt a long term perspective on profit maximization. Such analyses appear to confirm that leveraging can, in fact, be a good strategy for monopolists. In particular, *Pil Choi* and *Stefanadis*[46] have presented a model where a company monopolizes both complementary products, but also faces competition in both of these markets. The authors also assume that market entry for new competitors to either of the markets is only possible if they can make a successful innovation. Innovations, however, require investments. If the monopoly company bundles the two products under these circumstances, successful entry to either of the markets requires simultaneous innovations in both markets. This drives up the costs of market entry. Consequently, bundling may reduce rivals willingness to invest and innovate and, thus, effectively prevent market entry. In this case, tying does not necessarily lead to foreclosure in the product market but in the research and development market. Moreover, bundling may help spread out innovation costs over many products, which allows a dominant company to recover its costs, and profit from research.

Even if the Post-Chicago theories critique the Chicago School's permissive stance, the theories do not suggest a full return to the leverage theory. Instead, the theories recognize the benefits of tying and bundling and neither advocate that tying should be treated as *per se* illegal nor promote a *per se* legal approach.[47] The theories hold that such strong categorizations are not feasible. Whether tying should be permited depends on the circumstances in each invididual case.[48] Therefore, post-Chicago theories advocate that the rule of reason approach should be applied.

44 Ahlborn, Christian & Bailey, David & Crossley, Helen: An Antitrust Analysis of Tying: Position Paper. GCLC Research Papers on Article 82 EC. July 2005, 166-216. http://www.coleurope.eu/content/gclc/documents/GCLC%20Research%20Papers%20on%20Article%2082%20EC.pdf, pp. 174-175, visited January 15, 2010

45 Whinston, Michael D.: Tying, Foreclosure, and Exclusion. 80 American Economic Review 837 (1990).

46 Choi, J.P & Stefanadis, C.: Tying, Investment, and the Dynamic Leverage Theory. 32 RAND Journal of Economics 52 (2001).

47 Ahlborn, Christian & Bailey, David & Crossley, Helen: An Antitrust Analysis of Tying: Position Paper. GCLC Research Papers on Article 82 EC. July 2005, 166-216. http://www.coleurope.eu/content/gclc/documents/GCLC%20Research%20Papers%20on%20Article%2082%20EC.pdf, p. 176, visited January 15, 2010

48 Evans, David S. & Padilla, A. Jorge & Ahlborn, Christian: The Antitrust Economics of Tying: A Farewell to Per Se Illegality. (April 21, 2003). Antitrust Bulletin, 2003. Available at SSRN: http://ssrn.com/abstract=381940 or doi:10.2139/ssrn.381940, p. 54, visited January 21, 2010.

2.1.3 Transaction Cost Theory

Finally, transaction cost economics deploys another another framework for analysis and argues that tying is useful, since combining two products tends to increase output and lower prices by avoiding double marginalization. An integrated complementary monopoly is most likely to eliminate double marginalization and, thus, will lead to lower prices, higher output and increased consumer welfare than distinct complementary monopolies.[49] The double marginalization effect clearly illustrates that there is something worse than a monopoly, namely a chain of monopolies.

The explanation that transaction cost economics gives to tying is that tying contracts involve voluntary partial integration of production. Integration aims to overcome market failures that high transaction costs and the leverage the complementarities between tying and tied product cause.[50] Indeed, contractual negotiations between sellers and buyers may involve significant costs, in particular, if multiple expensive negotiations and many individual contracts characterize the industry.[51] In this respect, bundling may lower transaction costs and help to avoid market failures, which suggest that tying can arise without any exercise of market power or coercive forcing. In general, tying reduces transaction costs and the problems of uncertainty and contractual incompleteness. These problems are typical to the exchange of new and complex technologies.[52]

2.2 Tying and Efficiency Benefits

Today many scholars and authorities argue that tying and bundling do not necessarily have anti-competitive effects.[53] Indeed, it is widely held that tying can help to provide better products in a more cost effective way.[54] For example, bundling is a common practice in the industries that are

49 Hovenkamp, Herbert J.: Antitrust and the Close Look: Transaction Cost Economics in Competition Policy (December 2010). Available at SSRN: http://ssrn.com/abstract=1661993, p. 2, December 30, 2010; Hovenkamp, Erik N. and Hovenkamp, Herbert J., Tying Arrangements (May 14, 2012). U Iowa Legal Studies Research Paper No. 12-28. Available at SSRN: http://ssrn.com/abstract=1999063 or http://dx.doi.org/10.2139/ssrn.1999063, visited November 28, 2013.

50 Meese, Alan J.: "Tying Meets the New Institutional Economics: Farewell to the Chimera of Forcing". (1997). Faculty Publications. paper 542, http://scholarship.law.wm.edu/facpubs/542, p. 10, visited January 22, 2010.

51 Crane, Daniel A.: Mixed Bundling, Profit Sacrifice, and Consumer Welfare. Emory Law Journal, Vol. 54, 2006; Cardozo Legal Studies Research Paper No. 137. Available at SSRN: http://ssrn.com/abstract=838265, p. 8, visited January 21, 2010.

52 Gallini, Nancy & Trebilcock, Nancy: Intellectual Property Rights and Competition Policy: A Framework for Analysis of Economic and Legal Issues. In OECD Policy Roundtables. Competition Policy and Intellectual Property Rights. 1997. http://www.oecd.org/dataoecd/34/57/1920398.pdf, p. 347, visited April 13, 2010.

53 DG Competition discussion paper on the application of Article 82 of the Treaty to exclusionary abuses. Public consultation. Brussels, December 2005, paragraph 178;

54 See Carlton , Dennis W. & Waldman, Michael: Tying (August 1, 2008). 3 ISSUES IN COMPETITION LAW AND POLICY 1859, 2008. Available at SSRN: http://ssrn.com/abstract=1529843, p. 1860, visited January 14, 2010; Communication from the Commission. Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings. (2009/C 45/02), paragraph 49.

characterized by significant competition such as, for example, the automobile industry. This suggests that the practice has efficiency benefits.

Tying and bundling appear to be pervasive in the economy and, as a result, it has become the dominant form of sales: most goods and services are bundles even though we do not even notice it. For example, a car includes a bundle of tires, engine, breaks and so on.[55] Bork[56] has pointed out that "Every person who sells anything imposes a tying arrangement. This is because every product or service could be broken down into smaller components capable of being sold separately, and every seller refuses at some point to break the product down any further..."

In this respect, it is important to note that what constitutes a standard bundle has changed as time has passed. For example, air conditioners and sound systems were once optional accessories, but today they have transformed into standard equipment found in all cars. Consequently, what constitutes two goods at one moment in time can become a single good some time later.[57] For example, word processing software included neither spell checkers nor grammar checkers in the early 1980s. Instead, separate programs were sold for these purposes. Today word processing software includes both of these once stand-alone products.[58]

Moreover, mobile phones today are not just for making calls, but they are used for surfing the Internet, taking photos and playing music. Consequently, it can be said that in high-tech industries technological progress often entails product integration.[59] In many cases, this benefits the consumers. Thus, it cannot be categorically said that bundling is anti-competitive or that it tends to harm consumer welfare.

Instead, tying may have several benefits. First, it may reduce decision-making, search and transaction costs. The opposite of bundling is *à la carte* pricing, which means that consumers pay for the exact amounts of goods or services that they want. In idealized markets, units are divided as narrowly as consumers wish as the theory suggests that the more choice consumers have, the better the efficiency of the markets.[60] However, research in behavioral economics suggests that too many options may lead to no choice at all. Therefore, bundling may be beneficial as it restricts consum-

55 Liebowitz, Stan J. & Margolis, Stephen E.: Bundles of Joy: The Ubiquity and Efficiency of Bundles in the Technology Markets. 5 J. Competition L. & Econ 1, 3 (2009).

56 Bork, Robert H.: The Antitrust Paradox: A Policy at War with Itself. New York. Free Press 1978, 378.

57 Liebowitz, Stan J. & Margolis, Stephen E.: Bundles of Joy: The Ubiquity and Efficiency of Bundles in the Technology Markets. 5 J. Competition L. & Econ 1, 8-9, (2009).

58 Evans, David S. & Schmalensee, Richard: Some Economic Aspects of Antitrust Analysis in Dynamically Competitive Industries. http://www.nber.org/papers/w8268.pdf?new_window=1, p. 40, visited September 14, 2010.

59 Geradin, Damien & Ahlborn, Christian & Denicolò, Vincenzo & Padilla Blanco, Atilano Jorge: DG Comp's Discussion Paper on Article 82: Implications of the Proposed Framework and Antitrust Rules for Dynamically Competitive Industries (March 2006). Available at SSRN: http://ssrn.com/abstract=894466 or http://dx.doi.org/10.2139/ssrn.894466, p. 41, visited November 27, 2013.

60 Liebowitz, Stan J. & Margolis, Stephen E.: Bundles of Joy: The Ubiquity and Efficiency of Bundles in the Technology Markets. 5 J. Competition L. & Econ 1, 4 (2009).

er choice and may prevent consumers from being overwhelmed by the too many alternatives.[61] Choice can also be costly: rational choices may take time and effort, and, therefore, bundling may lead to reductions in transaction and search costs.[62]

Second, it is likely that tying can increase the efficiency of production and distribution. For example, packaging and distribution costs can be saved by utilizing the same systems for multiple products. *Evans* and *Salinger*[63] conducted an empirical stydy on cold remedies and found that some of the products are combinations of products that had been previously available separately. Interestingly, the price of the combined products was much lower than the sum charged for the component drugs when sold separately. The finding is understandable when the reader bears in mind that the cost of producing the active ingredients constitutes a small part of the total costs, while packaging the tablets and putting the active ingredients into appropriate dosage form make up a much larger part of the overall costs.

Indeed, cost savings and quality improvements are commonly cited as for bundling. For example, manufacturers assemble cars, since buying a car is less expensive for customers than buying all the components individually. In particular, if most consumers want to buy both products A and B, that is consumer valuations of the separate products are positively correlated, and there are cost savings from selling the two together, there are incentives for a monopolist to sell them bundled. For example, bundling two products together may allow the seller to achieve economies of scope in production, which may be passed on to consumers in bundled discounts.[64] Experiences from the automobile industry confirm that giving many options to consumers increases complexity costs and, thus, there may be diseconomics of scope if multiple separate products are produced.[65]

Third, tying may be used to safeguard brand names and goodwill. In particular, franchise ties are implemented to control quality control, as the franchisor wants to maintain high quality and uniformity in all stores.[66] Moreover, sometimes complex products work together with other complex products, and in the case of malfunction, a brand owner may be blamed without reason for other

61 Nalebuff, Barry: Bundling, Tying, and Portfolio Effects. DTI Economics Paper no. 1. February 2003. http://www.bis.gov.uk/files/file14774.pdf, p. 32, visited January 12, 2010.

62 Evans, David S.: Tying: The Poster Child for Antitrust Modernization (November 2005). Available at SSRN: http://ssrn.com/abstract=863031 or http://dx.doi.org/10.2139/ssrn.863031, p. 7., visited November 27, 2013.

63 Evans, David S. & Salinger, Michael: Why Do Firns Bundle And Tie? Evidence from Competitive Markets And Implications for Tying Law. 22 Yale J. on Reg. 37, 38, 52 (2005).

64 Nalebuff, Barry: Bundling, Tying, and Portfolio Effects. DTI Economics Paper no. 1. February 2003. http://www.bis.gov.uk/files/file14774.pdf, p. 31, visited January 12, 2010.

65 Evans, David S.: Tying: The Poster Child for Antitrust Modernization (November 2005). Available at SSRN: http://ssrn.com/abstract=863031 or http://dx.doi.org/10.2139/ssrn.863031, p. 6, visited November 27, 2013.

66 Hovenkamp, Erik N. and Hovenkamp, Herbert J.: Tying Arrangements (May 14, 2012). U Iowa Legal Studies Research Paper No. 12-28. Available at SSRN: http://ssrn.com/abstract=1999063 or http://dx.doi.org/10.2139/ssrn.1999063, pp.14-15, visited November 27, 2013.

manufacturers' faults.[67] Therefore, tying may promote product quality and protect the goodwill of the brand owner, which benefits both the brand owner and the consumers. In general, independent manufacturers may aim to serve too many brand owners, which may lead to sacrifices in performance.[68] Sometimes it may be too much to assume that the primary good would be compatible with all possible independent manufacturers' complementary products.[69] However, as said above tying may be an excessive way to protect quality and the same result may be achieved by less restrictive means, for example, by issuing specifications for the complementary product.[70]

Fourth, economic theory suggest that the pervasiveness of tying may even imply that the practice is typically beneficial or at least harmless; otherwise, it would not have been able to survive in competitive markets.[71] *Devlin* argues that a company that has significant market power but does not have a monopoly in the tying market is unlikely to introduce a tying practice that harms consumers. If it did so, it would only give a competitive advantage to its competitors in the tying market. Thus, harmful tying may exist only when there is little or no competition in the tying market.[72]

In conclusion, it appears that tying characterizes modern markets and is often motivated by legitimate efficiency concerns. Perhaps the most common efficiency-based rationale for tying is that it minimizes transaction costs, but it can also reduce costs in production, distribution, marketing, licensing and create economies of scale and scope. Moreover, tying can reduce search costs for the optimal combination of products working together, which plays a major role when complex products are involved.[73] Market power plays a crucial role in assessing whether tying has anticompetitive effects. Since tying is typically efficient and courts and authorities have difficulties in identifying anticompetitive tying with enough certainty, there should be a hurdle for legal intervention.[74] Kobayashi argues that in highly competitive markets, efficiency should be the presump-

67 In Hilti the European Court of Justice refused to accept that tying is justified because of safety concerns. Case T-30/89. Hilti v. Commission [1991] ECR II-1439, paragraph 20; See also Bishop, Simon & Walker, Mike: The Economics of EC Competition Law: Concepts, Application and Measurement. 3rd ed. London. Sweet & Maxwell. Thomon Reuters, 2010, 281.

68 Hovenkamp, Herbert J.: Tying Arrangements and Lawful Alternatives: Transaction Costs Considerations. (September 2011). U Iowa Legal Studies Research Paper No. 11-26. Available at SSRN: http://ssrn.com/abstract=1763386, pp. 1, 9, visited September 2, 2011.

69 Tirole, Jean, The Analysis of Tying Cases: A Primer. Competition Policy International, Vol. 1, No. 1, pp. 1-25, Spring 2005. Available at SSRN: http://ssrn.com/abstract=702641, p. 15, visited January 14, 2010.

70 See, for example, International Business Machines Corporation v. United States, 298 US 131 (1936).

71 Evans, David S. & Padilla, A. Jorge & Ahlborn: The Antitrust Economics of Tying: A Farewell to Per Se Illegality. (April 21, 2003). Antitrust Bulletin, 2003. Available at SSRN: http://ssrn.com/abstract=381940 or doi:10.2139/ssrn.381940, p. 3, visited January 21, 2010.

72 Devlin, Alan J., A Neo-Chicago Perspective on the Law of Product Tying (2007). American Business Law Journal, Vol. 44, No. 521, 2007. Available at SSRN: http://ssrn.com/abstract=1429864, pp. 15-16, visited January 20, 2010.

73 Schmidt, Hedvig: Competition Law, Innovation and Antitrust. An Analysis of Tying and Technological Integration. Cheltenham. Edward Elgar, 2009, pp. 16-17.

74 See also Carlton , Dennis W. and Waldman, Michael: Tying (August 1, 2008). 3 ISSUES IN COMPETITION LAW AND POLICY 1859, 2008. Available at SSRN: http://ssrn.com/abstract=1529843, visited January 14, 2010.

tive explanation for tying.[75] If no other motivation than efficiency for tying is found, intervention is not necessary.[76]

2.3 Tying High-technology Products

Tying is typical in technology rich markets, since these markets are characterized by networking and interconnection.[77] It is beyond doubt that consumers have, in fact, benefited, for example, from smartphones, which have integrated the functions of many different, previously separate products. Moreover, many consumers like the idea that various softwares are integrated in operating system at no or very little extra cost. However, the tying doctrine is largely based on precedents involving physical products; these precedents may not well apply to the integration of high technology products.[78] Therefore, it has been suggested that high technology products deserve a different treatment in competition law. However, the difficult question has remained the same, namely whether there is a single product market or multiple product markets and whether there is foreclosure.

High-technology markets are different from many traditional markets. If markets are characterized by network effects, consumer lock-in may take place quickly. If anticompetitive tying is suspected, the timing of legal intervention should be at the early stage of markets; otherwise, markets may already have tipped. These concerns suggest that tying may raise bigger concerns in high-technology markets than in the traditional settings. On the other hand, innovation rates can be so high in high technology industries that companies that fail to keep up with technological developments will benefit little from anticompetitive tying. Interestingly, it appears that the monopolization of a tied market is not the only concern in high-technology markets. Rather, tying may be used to consolidate market power in the tying market. These issues were debated in relation to *Microsoft's* practices both in the US and the EU.

75 Kobayashi, Bruce H.: Does Economics Provide a Reliable Guide to Regulating Commodity Bundling by Firms? A Survey of the Economic Literature. Journal of Competition Law & Economics, Vol. 1, No. 4, December 2005, pp. 707-746; George Mason Law & Economics Research Paper No. 05-35. Available at SSRN: http://ssrn.com/abstract=836724, p. 2, visited January 16, 2010.

76 See also Carlton, Dennis W. & Waldman, Michael: How Economics Can Improve Antitrust Doctrine towards Tie-In Sales: Comment on Tirole's 'An Analysis of Tying Cases: A Primer'. Competition Policy International, Vol. 1, No. 1, pp. 27-40, Spring 2005. Available at SSRN: http://ssrn.com/abstract=702645, p. 34, visited January 15, 2010.

77 Hovenkamp, Erik N. and Hovenkamp, Herbert J.: Tying Arrangements (May 14, 2012). U Iowa Legal Studies Research Paper No. 12-28. Available at SSRN: http://ssrn.com/abstract=1999063 or http://dx.doi.org/10.2139/ssrn.1999063, p.16, visited November 27, 2013.

78 Au, Thomas H.: Anticompetitive Tying and Bundling Arrangements in the Smartphone industry. 16 Stan. Tech. L. Rev. 188 (2012)

2.3.1 Tying and Microsoft III

Today, there are hints that the benefits of tying practices are noted in legal practice and, as a result, the courts may be close to adopting the rule of reason approach to tying. The change is clearly visible in the judgment of the Court of Appeals of the Federal Circuit in *Microsoft III*[79]. The case dealt with antitrust charges the US Department of Justice and 21 states had raised. The complaint involved measures that Microsoft had taken in respect to Netscape's Web browser and Sun's Java technologies. In relation to the former, the question was whether Microsoft had illegally tied its Web browser with its PC operating system or not.

In 2000, the US District Court for the District of Columbia held Microsoft liable for tying and monopolization under Section 1 and Section 2 of the Sherman Act. The Court held that Microsoft was aware of middlewares, which could have developed rivals to it on the operating systems market. In order to prevent this, Microsoft tried to make developers ignore the interfaces of the Netscape Navigator Web browser and Sun's Java technology.[80]

As for tying the court applied the modified *per se* rule and held that Microsoft had formed an illegal tying arrangement. The Court concluded that operating systems and browsers are separate products with separate consumer demand. Moreover, the court held that Microsoft had monopoly power in the tying market and not an insubstantial amount of commerce was foreclosed. The last test criterion, namely the forced bundling -requirement, was also fulfilled, as Microsoft had taken measures to prevent unbundling. The fact that Microsoft provided the browser for free did not change the issue, because consumers pay, in one way or another, for the browser alongside the Windows operating system.[81] Finally, the court held that technical necessity or business efficiencies did not explain tying, but *"it was the result of a deliberate and purposeful choice to quell incipient competition before it reached truly minatory proportions."* Microsoft appealed to the Federal Circuit.

The Federal Circuit distinguished the modified *per se* rule of Jefferson Parish and applied the rule of reason approach instead.[82] It concluded that *Microsoft III* was vitally different from the preceding tying cases, because the tie involved technological integration and enhanced the value of the tying product to its users.[83] In particular, the separate-products test did not fit with the facts of the case. The test was too backward-looking, because it focused on historic consumer behavior from the time period before tying was implemented and on companies that had not integrated the tying and tied goods. The test was a poor fit to the new innovative integration that takes place in technologically dynamic markets.[84]

79 United States v. Microsoft Corp., 253 F. 3d 34 (D.C. Cir. 2001).
80 United States v. Microsoft Corp., 87 F. Supp 2d 30, 38-39 (D.D.C. 2000).
81 Ibid., pp. 49-50.
82 United States v. Microsoft Corp., 253 F. 3d 34, 84 (D.C. Cir. 2001).
83 Ibid., p. 90
84 Ibid., p. 89.

The Federal Circuit concluded that the separate product test also had other deficits. The company that at first merges previously distinct functionalities may be unjustifiedly condemned, because at the moment of integration there still tends to be a distinct market for the tied product. In particular, this is problematic in platform software markets, where integration is common – even among companies without market power.[85] As a result, the formal application of *per se* rules may jeopardize platform innovation in the PC, network computer and information appliance markets.[86]

Therefore, the Federal Circuit concluded that the rule of reason approach should be utilized in software platforms and remanded the tying question to the District Court for reconsideration. The judgment appears to indicate that technological integration deserves favorable treatment compared to the other forms of tying.[87] The refusal of the Federal Circuit to apply the *per se* rule to platform software suggests that high technology products may form an exception to that rule. In the end of 2001, the US government and Microsoft, however, reached a settlement, and the tying charge was dropped.

2.3.2 Tying and Microsoft in the EU

Microsoft[88] is perhaps the most important and the most complex tying case prosecuted under EU competition law. In the end of 1998, Sun Microsystems Inc. made a complaint to the Commission. Sun alleged that Microsoft had abused its dominant position by not disclosing certain crucial information on its operating system to competitors. Access to that information would have been vital to the competitors to enable them design products that would have fully interoperable with Microsoft's PC operating systems. After receiving the complaint, the Commission launched an investigation into Microsoft's conduct, including tying Windows Media Player with Windows operating system. Windows Media Player had been installed as a non-removable part of Windows since May 1999. The Commission gave its decision in 2004.

Microsoft's argument that the operating system and the Windows Media Player constituted one integrated product was rejected. The Commission held media players as products that must be held to be separate from operating systems. It cited numerous reasons for its finding. First, consumer demand for media players and operating systems is not identical. Stand-alone media players that could be installed on PCs existed, and software companies specialized in supplying such players. Thus, there clearly was consumer demand for media players and the demand was different from consumer demand for PC operating systems.[89] The Commission, however, acknowledged that the direct consumer demand test may be outdated, since it focused on past consumer

85 Ibid., pp. 92-93.
86 Ibid., p. 95.
87 Ahlborn, Christian & Bailey, David & Crossley Helen: An Antitrust Analysis of Tying: Position Paper. GCLC Research Papers on Article 82 EC. July 2005, 166-216. http://www.coleurope.eu/content/gclc/documents/GCLC%20Research%20Papers%20on%20Article%2082%20EC.pdf, pp. 183-184, visited January 21, 2010.
88 Microsoft v. Commission. Commission Decision Case 3/37.792. March 24, 2004.
89 Ibid., paragraph 804.

behavior before product integration. However, despite Microsoft's product integration there still was significant demand for alternative media players.[90]

Second, operating systems and media players were clearly two distinct products. Microsoft had developed Windows Media Player versions for competitors' operating systems and released and promoted upgrades to the player with no connection to the general Windows operating system upgrades. This worked to further demonstrate that operating system and media players were not the same product. Moreover, Windows Media Player and operating system had different functionalities and Microsoft applied different licensing agreements to them.[91]

The Commission also rejected Microsoft's argument that bundling the media player with the operating system was a normal commercial practice as independent companies that offered media players still existed. In addition, Sun and Linux vendors did not bundle their own media players but, instead, offered third party players. Finally, Microsoft's Windows was the only operating system which did not allow its users to remove the bundled media player code.[92] This was significant as it entailed that customers were not allowed to obtain the tying product without the tied product. Microsoft tried to argue that Windows Media Player was offered for free and there was no obligation to use it, but the Commission rejected this by pointing out that Article 102 (d) TFEU includes neither reference to paying nor to the forced use of the tied product. As long as Windows Media Player was automatically added, alternative media player suppliers were competitively disadvantaged.[93]

The Commission, however, acknowledged that it is not enough to prove the foreclosure effect for competitors by only demonstrating that the tied product is bundled with the dominant tying product. Since other media players could be for example downloaded from the Internet, foreclosing competition could not simply be assumed.[94] However, Microsoft's market share at the time had been over 90% with respect to operating systems. Tying Windows Media player with the Windows operating system provided a distribution system that had no comparable. This made users less likely to use alternative media players, since they already had an integrated media player. [95]

The alternative channels of getting a media player, such as downloading, were less efficient. Tying helped Microsoft get the same distribution in three months as it would have gotten in one year by downloading[96]. Moreover, tying helped Microsoft get content providers to supply content in the Windows Media Player format, which increased the format's popularity and further complicated market entry for new competitors. Since Windows was installed on the majority of PCs, software developers had sizable incentives to write applications for the Windows Media Player.[97] This

90 Ibid., paragraph 808.
91 Ibid., paragraphs 805, 810-812.
92 Ibid., paragraphs 822-823.
93 Ibid., paragraphs 830-833.
94 Ibid., paragraph 841.
95 Ibid., paragraphs 844-845.
96 Ibid., paragraph 911.
97 Ibid., paragraph 891, 895.

was likely to cause network effects in favor of Microsoft Media Player. The relevant market data confirmed a rising trend in Windows Media Player and Windows Media format use.[98] However, the data simultaneously showed that Windows Media Player was not better in quality than its competitors.[99] Finally, although competitors may not have been affected by the dominant company's anti-competitive conduct, the absence effects does not disprove that tying may foreclose competition, the Commission held. Otherwise, legal intervention would always come too late, when markets would have already tipped.[100]

Finally, the Commission rejected Microsoft's argument that media players could not be viewed as substitutes for operating systems, and, thus they could not threaten its dominant position. The Commission concluded that media players could become substitutes, if they were combined with Java.[101] Here the Commission implicitly referred to the theory of defensive leverage. Moreover, the Commission applied the offensive leverage theory, when it held that the media player market was a gateway to other related markets such as content encoding software, format licensing, wireless information device software, 1240 DRM solutions and online music delivery. The Grand Chamber of the General Court confirmed the Commission's decision and Microsoft did not appeal to the Court of Justice of the European Union.[102]

2.3.3 Is Google the Next Case?

Microsoft was one of the first but not necessary the last technical tying case subjected to competition law scrutiny. *Edelman* argues that Google has used tying and bundling to expand its dominant position on the market for algorithmic searches to other markets. Google is a dominant high-tech company. It has an extremely popular web search service that features not only algorithmic search results, but offers a slew of Google services such as Google Maps, Google Images, Google Shopping, You Tube, etc. These services get prominent placement in search results whereas competing services receive a less favorable treatment. Consequently, Google's services get considerable user traffic.[103]

In practice, the preferential treatment Google accords to its own services, directly affects competitors' viability. They get fewer clicks as users tend to contend with using Google's services and do not bother to search for what competitors offer. Moreover, it is a well known fact that users tend to favor the most popular search results. They tend to assume that links to Google's services appear first since they refer to the most popular or the best services. However, many do not realize

98 Ibid., paragraph 944.
99 Ibid., paragraph 951.
100 Ibid., paragraph 946.
101 Ibid., paragraphs 971-972.
102 Case T-201/04. Microsoft Corp. v. Commission [2007] ECR II-03601.
103 Edelman, Benjamin: Does Google Leverage Market Power Through Tying and Bundling? (May 12, 2014). Journal of Competition Law and Economics 11, no. 2 (June 2015): 365-400. Available at SSRN: http://ssrn.com/abstract=2436940 or http://dx.doi.org/10.2139/ssrn.2436940, pp. 5-6, visited August 5, 2015.

that Google consciously favors its services and put its competitors at a disadvantage by placing its own services on top.[104]

Google has been the subject of an antitrust investigation in the USA. In January 2013, the US Federal Trade Commission (FTC) published the results of the investigation: "*The FTC also conducted an extensive investigation into allegations that Google biased its search results to disadvantage certain vertical websites; and that Google entered into anticompetitive exclusive agreements for the distribution of Google Search on both desktop and in the mobile arena. The agency decided not to take action in connection with these allegations.*"[105] The question of search-related practices was unanimously (5-0) dismissed. The FTC argued that although additional changes made to Google's search algorithms may harm competitors, they were considered to be innovations that improved the product and user experience.

After the FTC ruling the EU Commission sent a Statement of Objections to Google in April 15, 2015. The Commission alleged that Google had abused its dominant position in the markets for general search services by giving a favorable treatment to its own services by placing them prominently on customers' screens. The investigation is still on-going but if Google is found to infringe competition law, Google may be forced to change the way it does business in Europe. One possible remedy could be that Google would be obliged to give its competitors' services treatment equal to the one it gives its own service.[106]

Many experts have argued that Google controls the search engine space and dictates what sites and services appear easily accessible on computer screens in the same way that Microsoft previously controlled the desktop world.[107] In their view, the Commission has a valid case. However, many experts are wondering whether there are enough similarities between Google's and Microsoft's practices to warrant the intervention.

Some commentators have also argued in support of Google's practices. Some have, first, claimed that competition law imposes no restrictions on search services tying. Consequently, Google is free to provide whatever results it likes. Furthermore, the critics have pointed out that it is uncertain whether Google's offering even consists of different products. The Google experience could be interpreted to be one integrated product. Consequently, integrating algorithmich search with

104 Edelman, Benjamin: Leveraging Market Power through Tying: Does Google Behave Anti-Competitively? Harvard Business School Working Paper, No. 14-112, May 2014, pp. 8-10.

105 Google Agrees to Change Its Business Practices to Resolve FTC Competition Concerns in the Markets for Devices Like Smart phones, Games and Tablets, and in Online Search. January 3, 2013. https://www.ftc.gov/news-events/press-releases/2013/01/google-agrees-change-its-business-practices-resolve-ftc, visited January 15, 2014.

106 European Commission – Press Release. Antitrust: Commission sends Statements of Objections to Google on comparison shopping service; opens separate formal investigatin on Android. http://europa.eu/rapid/press-release_IP-15-4780_en.htm, visited April 20, 2015.

107 Edelman, Benjamin G.: Does Google Leverage Market Power Through Tying and Bundling? (May 12, 2014). Journal of Competition Law and Economics 11, no. 2 (June 2015): 365-400. Available at SSRN: http://ssrn.com/abstract=2436940 or http://dx.doi.org/10.2139/ssrn.2436940, p. 34, visited August 5, 2015.

a complementarity service offering can be argued to offer benefits for the consumer, as the consumer needs to spend less effort to find what she needs.

Moreover, Google's services are free to the users and nothing forces the customers to use them. The no-cost nature of the services makes it difficult to argue that consumers would suffer harm. Free service provision is possible, as Google does not operate on traditional bilateral markets, but on two- or multisided markets.[108] Google can offer services for free to the consumers, because it gets its revenue from search related online advertising, that is, from advertisers. In the traditional brick-and-mortar world, Google's business model resembles a free advertising newspaper that also is free for readers but not for advertisers. Consequently, the business model is not only specific to the high-technology markets.

Some commentators think that Google's business model and products are innovative and have gained popularity among consumers for good reason. Others[109] have categorized it as predatory pricing. The problem caused by the predatory pricing diagnosis is not confined to Google alone. Multisided market business models are, in fact, the norm in internet business: nearly all companies use one market to attract users with zero-cost or below-cost pricing while revenue is earned on the other side of the market. Moreover, Google is not free from competitive pressure as there are so-called vertical search engines, such as, for example, Amazon in books, which are aimed at seeking specific information. Competition is said to be only a click away.

Also arguments advicing caution have been raised.[110] These commentators have argued that the competitive consequences of Google's practices are highly uncertain. It may, for example, be difficult to rule whether Google's actions are pro-competitive behavior or anticompetitive, because the market is new and not necessarily well understood. The uncertainties should result in cautious interventions. Aggressive, erroneous application of competition law – that is interventions against innovations and business practice that later turn out to be pro-competitive – could be fatal to the markets. False positives tend to be more problematic than false negatives, since self-correcting market mechanisms mitigate the effects of false negatives but not the consequences of false positives.[111] Finally, it is also uncertain whether Google's practices, in particular, amout to tying or whether they, in fact, constitute some other type of abuse.

108 Koerber, Torsten: Let's Talk About Android – Observations on Competition in the Field of Mobile Operating Systems (July 4, 2014). German Version: NZKart 2014, 378 - 386. Available at SSRN: http://ssrn.com/abstract=2462393, p. 4, visited September 14, 2014.

109 See Bottin Cartographes/Google France, where the zero pricing of the Google Maps API was held to be predatory pricing. Tribunal de commerce de Paris, 15ème chambre, Jugement du 31 Janvier 2012, Bottin Cartographes Google France, Google Inc.

110 Manne, Geoffrey A. & Wright, Joshua D.: Google and the Limits of Antitrust: The Case Against the Antitrust Case Against Google (March 24, 2010). Lewis & Clark Law School Legal Studies Research Paper No. 2010-19; George Mason Law & Economics Research Paper No. 10-25; Harvard Journal of Law and Public Policy, Vol. 34, No. 1, Winter 2011. Available at SSRN: http://ssrn.com/abstract=1577556 or http://dx.doi.org/10.2139/ssrn.1577556 , visited January 10, 2014.

111 Easterbrook, Frank. H.: The Limits of Antitrust. 63 Texas Law Review 1 (1984).

The Commission has also opened a separate investigation into the Android mobile operating system. The Commission investigates whether Google has hindered the development and market access of rival mobile operating systems, applications and services.[112] The Android investigation is also complicated. Also here it appears that Microsoft differs from Google.[113] For example, Microsoft's dominant position in the operating system markets had lasted several years and entry barriers were high, whereas the strong market position of Android is still rather young and entry barriers are perhaps lower than in the case of Windows. It remains to be seen whether Android can maintain its position on these dynamic markets.

2.4 Tying Doctrine in EU Competition Law

What is the current state of law in the EU? In EU competition law, tying is prohibited if a five-prong test is met:

1) The tying undertaking is dominant in the tying market;
2) the tying and tied goods are two distinct products or services;
3) customers cannot obtain the tying product without the tied product and;
4) tying forecloses competition and;
5) tying cannot be justified by objective factors or efficiencies.[114]

Dominance in the market for the tying product has always been a precondition for the finding of abuse. However, no requirement for dominance in the tied market has ever been imposed, but such dominance may make the finding of abuse more likely.[115] The approach is natural as tying is likely harmless, if the tying product and tied product markets are competitive. Attempts at intro-

112 European Commission – Press Release. Antitrust: Commission sends Statements of Objections to Google on comparison shopping service; opens separate formal investigatin on Android. http://europa.eu/rapid/press-release_IP-15-4780_en.htm, visited April 20, 2015.

113 Koerber, Torsten: Let's Talk About Android – Observations on Competition in the Field of Mobile Operating Systems (July 4, 2014). German Version: NZKart 2014, 378 - 386. Available at SSRN: http://ssrn.com/abstract=2462393, pp. 18-19, visited September 14, 2014.

114 The first four criteria were defined in Microsoft. The fifth criterion is based on case law. See Microsoft. Commission Decision Case 3/37.792. March 24, 2004, paragraph 794 and T-228/97 Irish Sugar v. Commission 1999 II-02969, pargraph 189.

115 DG Competition discussion paper on the application of Article 82 of the Treaty to exclusionary abuses. Public consultation. Brussels, December 2005, paragraph 184. See also Tetra Pak II where it was held that "an undertaking which enjoys a quasi-monopoly on certain markets and a leading position on distinct, though closely associated, markets is placed in a situation comparable to that of holding a dominant position on those markets as a whole. Conduct by such an undertaking on those distinct markets which is alleged to be abusive may therefore be covered by Article 86 of the Treaty without any need to show that it is dominant on them. "

ducing unattractive tying practices when consumers have plentiful choice will only likely lead to consumers ending up choosing competitors' products.[116]

Customer demand is decisive when courts rule on what kind of product or service packages can be held to constitute distinct products. The standard test is that the tied products are held to be distinct, if a considerable number of customers have purchased or would have purchased the tying product without the tied product from the supplier. Moreover, there may be direct or indirect evidence suggesting that the products are distinct. Direct evidence may show that customers buy the tying product and tied product separately from other manufacturers, whereas indirect evidence may show that the tied product is manufactured and sold without the tying product, or that companies that have only little market power tend not to tie.[117] Commercial usage may indicate that two products are not distinct, but as in *Tetra Pak II*, it does not automatically guarantee that a certain practice is lawful.

The appraisal of anti-competitive foreclosure is perhaps the vaguest of the criteria: both in *British Sugar* and *Hilti* tying did not require Commission to demonstrate that practices had a significant effect on the tied market, but in Microsoft the foreclosure effects were analyzed in detail. The Commission even stated that *"the higher the tied percentage of total sales on the tied market, the larger is normally the foreclosure effect."* Moreover, the foreclosure effect may increase if there are significant economies of scale, a production or design learning curve, network effects or entry barriers in the tied market.[118] *Moreover,* if the dominant firm offers a bundle with multiple products, the anti-competitive foreclosure effect may be stronger–especially if the competitors cannot easily replicate the bundle.[119] Foreclosure is a particulary relevant concern in the US, where it has been one of the key elements assessed in tying cases. For example, in *Brantley*[120] customers complained that a cable television provider only sold channels in large packages. The complaint was dismissed as no foreclosure effect had ensued: the plaintiffs were not able to show that any independent program provider would have been excluded from the market by the arrangement.

In addition to suppressing existing competition, tying practices may be used to pre-emptively to stave off competitors and protect a dominant position in the tying market.[121] In particular, long run tying or bundling strategies may have considerable anticompetitive effects. In these strategies, tying is often implemented through technical means, which is often costly to reverse and may

116 Hovenkamp, Erik N. and Hovenkamp, Herbert J.: Tying Arrangements (May 14, 2012). U Iowa Legal Studies Research Paper No. 12-28. Available at SSRN: http://ssrn.com/abstract=1999063 or http://dx.doi.org/10.2139/ssrn.1999063, p.3, visited November 27, 2013.

117 Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings. 2009/C 45/02, paragraph 51.

118 DG Competition discussion paper on the application of Article 82 of the Treaty to exclusionary abuses. Public consultation. Brussels, December 2005, paragraphs 196 and 199.

119 Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings. 2009/C 45/02, paragraph 54.

120 Brantley v. NBC Universal, Inc. 675 F.3d 1192, 1196 (9th Cir. 2012).

121 Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings. 2009/C 45/02, paragraph 52.

prevent the resale of the component products.[122] However, this question is controversial. Some commentators have highlighted that interventions are more sensible when tying is implemented with contracts rather than by product design. Interventing in internal company activities *'for which unspecified relationships and transactions are not mediated by the price system' imposes significant costs and has uncertain consequences.*[123]

The Commission has not included the third and fifth criteria in its 'official test' contained in its Guidance paper. Yet, at least the efficiency and objective reasons defenses still appear to be valid and effective defenses.[124] Thus, under EU law tying understakins may invoke objective justifications or claim that tying, in fact, increases economic efficiency. To assess whether tying practices are prohibited, the Commission analyzes whether tying or bundling leads to production, distribution or transaction cost savings. Moreover, it analyzes whether tying or bundling can facilitate the launch of new combined products and whether the practices allow the efficiency benefits from production or buying large quantities of the tied product to pass to consumers.[125]

How to categorize the EU law tying test? It is uncertain whether the Commission's decision in *Microsoft* changed the test fundamentally. Some commentators have suggested that the Commission followed the US modified per se rule established in *Jefferson Parish*.[126] Others have argued that the rule of reason approach was applied instead.[127] It is, nevertheless, evident that Commission did something new in Microsoft. It analyzed the potential pro-competitive effects and foreclosure effects of tying in more detail and depth than before, which suggest that it had adopted a more lenient approach to tying.[128]

3 Conclusion

Recent court decisions indicate that courts are increasingly willing and capable to analyze the effects tying has on competition. This appears to be leading to the gradual abandonment of the *per se* prohibition of tying. The alternative, the rule of reason approach is the best suited for tying cases in high-technology industries, in particular. Treating tying as per *se* illegal or using doctrines that effectively lead to such outcomes appears a suboptimal strategy and is likely to result in unnecessary interventions in cases where the tying practices have little or no competitive effects.

122 Ibid., paragraph 53.
123 Carlton, Dennis W. & Waldman, Michael: Tying (August 1, 2008). 3 ISSUES IN COMPETITION LAW AND POLICY 1859, 2008. Available at SSRN: http://ssrn.com/abstract=1529843, pp. 1860, 1876, visited January 14, 2010.
124 See Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings. 2009/C 45/02, paragraphs 50 and 62.
125 Ibid., paragraph 62.
126 Evans, David S. & Salinger, Michael: Why Do Firns Bundle And Tie? Evidence from Competitive Markets And Implications for Tying Law. 22 Yale J. on Reg. 37, 45 (2005).
127 Kuoppamäki, Petri: Uusi kilpailuoikeus. 2. painos. Sanoma Pro Oy 2012, p. 258.
128 Schmidt, Hedvig: Competition Law, Innovation and Antitrust. An Analysis of Tying and Technological Integration. Cheltenham. Edward Elgar, 2009, 52, 114.

Indeed, the legal formalism appears to lead courts to unfoundedly assume tying to have only negative effects and either commit insufficient resources to the analysis of efficiencies or even ignore it in its entirety.

Although the Chicago School has profoundly influenced antitrust law, tying doctrine has remained resistant to its sway. This is understandable, because per se legality appears to be too much. Tying can have both negative and positive effects and should be judged taking into account such effects. The rule of reason approach was applied in *Microsoft III*[129] in the US and there were signs of effects-based analysis in *Microsoft*[130] in the EU, but it may be too early to say whether they marked a turning point towards a more favorable approach to tying and technical integration. Nevertheless, it is more likely that the tying doctrine is changing. Today the benefits of tying are better understood and must be taken into account in the application of tying doctrine.

129 United States v. Microsoft Corp. 253 F.3d 34 (D.C. Cir. 2001)

130 Microsoft v. Commission. Commission Decision Case 3/37.792. March 24, 2004.