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Tying and bundling in the digital era

Stefan Holzweber

Post-Doc, Department for Economic and Business Law, University of Vienna, Vienna, Austria

ABSTRACT

Hardly any doctrine of competition law has been modified more significantly by digitization than tying and bundling. While it was originally developed for the combined sale of two products, this concept was recently applied to cases like software integration or the prioritized display in search engine rankings. Against this backdrop, this paper seeks to shed some light on the reasons that let the concept of tying and bundling evolve in the digital context. On the basis of Post-Chicago School concepts, it is argued that digital markets are particularly vulnerable to tying and bundling practices. This led to a broadening of the scope of the doctrine of tying and bundling: It may be applied to all cases where consumers are nudged to demand a supplementary product, thereby foreclosing the market for this supplementary product. In the context of digital markets, the doctrine tying and bundling thus evolved into a general theory of leveraging.

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KEYWORDS Abuse of market power; leveraging; digitization; tying and bundling

1. Introduction

In the course of time, legal doctrines may change their scope of application. On the one hand, it is conceivable that the reasoning behind a doctrine is outdated after a certain number of cases and thus its application is discontinued.[1] On the other hand, a legal doctrine may be applied to cases, which were not regulated before or were subject to another doctrine, resulting in a broadening of its scope of application. Arguably, legal doctrines do not stay idle when their scope of application changes; this is particularly the case when they are applied to new phenomena. That is due to the fact that in a new setting, a legal doctrine may be adapted to the

CONTACT Stefan Holzweber stefan.holzweber@univie.ac.at

[1] One example for this is the *TeliaSonera* case by the ECJ 17.2.2011, C-52-09, in which the Essential Facilites doctrine was discontinued for Margin squeeze cases. This decision lead to heavy criticism in academia, see eg Nicolas Petit, *Droit européen de la concurrence* (L.G.D.J. 2013) 364: 'D'emblée, il nous faut dire que cet arrêt constitue l'une des plus malheureuses contributions jurisprudentielles contemporaines'.

specific circumstances of the case, which may necessitate additional considerations to be taken into account. This might – in the long run – lead to a modification of the doctrine as it was originally conceived. A legal doctrine's swaying scope of application therefore often is accompanied by a modification of the doctrine itself.

Undoubtedly, the rise of the internet came along with an unseen broadening of the scope of legal doctrines from all fields of law. Lawmakers were frequently too slow to address the challenges of digitization, requiring judges to apply legal doctrines which were originally conceived for the analogue world and thereby modifying them. This holds particularly true for competition law, where the substantive law remained virtually unchanged ever since they were created.[2] Thus, the competition concepts made up for the brick-and-mortar economy needed to be broadened in order to cope with Google, Ebay and Facebook, etc.

When it comes to cases of abuse of dominance, hardly any doctrine of competition law was broadened more markedly with the advent of the internet economy than the concept of tying and bundling. While it was originally developed for the combined sale of more than one product, in the last decade this doctrine was applied to the integration of software into an operating system[3] and also to the prioritized display of one's own services in a search engine ranking.[4] The general reasoning behind the concept of tying and bundling can thus be applied to cases, which, at first sight, bear little resemblance to the combined sale of more than one product.[5]

Against this backdrop, this paper seeks to shed some light on how the specific setting of digital markets changed the assessment of tying cases in EU competition law. First, the evolution of tying and bundling cases in the EU will be retraced. Secondly, tying and bundling will be put in an economic context in order to allow a better understanding of this concept; furthermore this may illustrate why most recent tying and bundling cases can be found in digital markets. Finally, it will be explored how the assessment of tying cases in the digital era modified the concept of tying and bundling.

[2]Aside from minor changes in some Block Exemption Regulations, the substantive law remained unchanged in the EU. This was not the case with the substantive law in the member states which were – like the German GWB – modified in order to take account to the new challenges that pose digital markets.

[3]Case T-201/04 *Microsoft* [2014] ECLI:EU:T:2007:289.

[4]Commission Decision, AT.39740 *Google Search (Shopping)* (C(2017) 444, 27.6.2017).

[5]This led to a vivid discussion whether the Google Shopping case constitutes a novel form of abuse that does not fit into one of the existing types of abuse. For a more detailed discussion, see eg Pinar Akman, 'The Theory of Abuse in Google Search: A Positive and Normative Assessment Under EU Competition Law' [2017] Journal of Law, Technology & Policy 301; Magali Eben, 'Fining Google: A Missed Opportunity for Legal Certainty' [2018] European Competition Journal 129.

2. The evolution of tying and bundling

According to Art 102 (d) TFEU, it may be deemed an abuse of market power when a dominant undertaking makes "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". As tying and bundling practices frequently include an agreement between undertakings, they may also fall within the ambit of Art 101 TFEU, which is mirrored by the fact that tying and bundling agreements are explicitly mentioned in Art 101 (e) TFEU. However, the case-law on tying in the context of Art 101 TFEU is rather limited compared to Art 102 TFEU.

It is possible to distinguish three different ways in which market dominant undertakings may make the conclusion of a contract conditional on the acceptance of supplementary obligations: First, the so called *pure bundling* occurs when two products are sold jointly only, making it impossible to acquire the products individually. In the case of *mixed bundling*, the bundled goods are offered on their own, but also in a package. However, there is a financial incentive to buy the package because in sum, the individual prices are higher than the bundled one. Finally, *tying* refers to a situation where some of the products in the package may be bought individually, whereas others can be purchased in a package only.[6] Since the economic characteristics of these variants are similar, they are usually analysed together.

The first cases of tying and bundling were straightforward: In the *London European-Sabena* case, access to a market dominant reservation system was exclusively granted on condition that a handling contract was concluded.[7] In *Hilti*, the Court of First Instance found that Hilti pursued a policy of supplying cartridge strips only when they were purchased with the necessary complement of nails.[8] In the *Tetra Pak II* case, the conditions of sale of Tetra Pak equipment included the clause that the purchaser had to use Tetra Pak cartons on Tetra Pak machines, hence tying the sale of equipment to the sale of cartons.[9] These cases are at the core of the prohibition of Art 102 (d) TFEU since the purchasers who were willing to buy the market dominant product or service, had to

[6] Robert O'Donoghue and Jorge Padilla, *The Law and Economics of Art 102 TFEU* (Hart Publishing 2013) at 596.

[7] Commission Decision IV/32.318 (OJ L 317, 24.11.1988, p 47–54).

[8] Case T-30/89 [1991] ECLI:EU:T:1991:70.

[9] Case T-83/91 [1994] ECLI:EU:T:1994:246.

enter into a contractual obligation to purchase another product or service. These cases are therefore called contractual tying.

For the evolution of the doctrine of tying and bundling, the *Tetra Pak II* case was of particular importance. In this case, Tetra Pak argued that the tied products were complete and indivisible systems by their nature and by their commercial usage and thus the tying practice should not fall within the ambit of Art 102 (d) TFEU. The European Court of Justice rejected this argument in a remarkable manner by stating that

> The list set out in the second paragraph of Art 86 of the Treaty [now Art 102 TFEU] is not exhaustive. Consequently, even where tied sales of two products are in accordance with commercial usage or there is a natural link between the two products in question, such sales may still constitute abuse within the mean of Article 86.[10]

Thus, the concept of tying and bundling was stretched beyond the limits of what is now Art 102 (d) TFEU, including cases in which the tied or bundled goods are connected by their nature or according to commercial usage. Arguably, this was an early hint by the ECJ, indicating that the competition concerns behind tying and bundling are broader than what is covered by the wording of Art 102 (d) TFEU.

The advent of the digital economy evoked further evolution of the doctrine of tying and bundling. This is best illustrated by the *Microsoft* cases, in which the integration of Microsoft's Windows Media Player[11] and Internet Explorer[12] into the Windows operating system were subject to judicial review. In these cases, the European Courts held that product integration may be tantamount to contractual tying and thus such a practice might be deemed an abuse of market dominance. The reasoning is persuading for software, since it is fairly easy to combine applications by comingling their codes.[13] Even though a consumer acquires only one product, he or she may actually get two different products, which is seen as equal to a situation where he or she were coerced to conclude multiple contracts. In order to ensure that the concept of tying and bundling is effective in the digital environment, it arguably is inevitable to extend competition law scrutiny to the product design of market dominant undertakings in the digital environment.

[10]*Tetra Pak II* (n 9) at recital 37.
[11]*Microsoft* (n 3).
[12]Commission Decision AT. 39.530 *Microsoft (Tying)* (OJ C 242, 9.10.2009, p. 20–21).
[13]Qiang Yu, 'Technically Tying Applications to a Dominant Platform in the Software Market and Competition Law' [2015] European Competition Law Review 160.

For the time being, the last step in the evolution of tying and bundling was the much discussed *Google Search*[14] case that led to a € 2.4 billion fine for abusing dominance in the search engine market. The claim was that Google gave its own services[15] an illegal advantage by placing them more favourably in the search engine results than other services. While Google's own comparison shopping service was placed at the top of the search results, Google's competitors were on average placed on page four of the search results.[16] This raises the question whether the favourable treatment of own services may be covered by the tying and bundling concept; or in other words: Does it suffice that consumers are more likely to choose Google's comparison shopping service when using Google Search to consider these products to be tied? Both, the European Commission and the UK High Court of Justice supported this hypothesis,[17] because it could be established that users display positional bias – meaning that they are more likely to click on a link that is highly ranked.[18] In the digital era, placing one's own goods more favourably than others is therefore tantamount to making the conclusion of a contract contingent on the acceptance of other obligations.

3. Law and economics of tying and bundling

What were the reasons behind this evolution of tying and bundling? Why was the development of tying and bundling accelerated so much by the rise of the digital economy? The answers to these questions arguably lie in the economic theory behind tying and bundling. It has to be highlighted that in the history of competition law, only very few doctrines were subject to a more intense interplay between law and economics than tying and bundling. This is doubtlessly due to the teachings of the Chicago School that had a strong and persuading position on the competitive effects of business practices like tying and bundling. Therefore, in order to retrace the evolution of the concept of tying and bundling, it is necessary to put this business practice into the context of the economic discussion.

[14]*Google Search (Shopping)* (n 4). At the time of writing, the Android decision by the European Commission was not yet publicly available.

[15]The case brought forward by the European Commission dealt with Google's comparison shopping service, while in a private suit before the High Court of Justice, Google's map services were matter in controversy. See for the latter High Court of Justice [2016] EWHC 253 (Ch).

[16]Commission, 'Fact Sheet' MEMO/17/1785.

[17]High Court of Justice [2016] EWHC 253 (Ch) at recital 60, but Justice Roth dismissed the claim because it could not be established by the claimants that the self preferencing had anti-competitive effects.

[18]ibid at recital 102.

3.1. The pre-Chicago School thinking

The early cases of tying and bundling were marked by an intuitive theory of leveraging.[19] According to this theory, a dominant undertaking could spread its market power from a dominated market to another competitive market in order to establish a "new or second monopoly in this market".[20] Eventually, the undertaking engaged in tying and bundling could obtain two monopoly profits; due to the doubling of the dead weight loss, consumer welfare would decrease. Tying and bundling was, thus, seen as an instrument to harm consumers by monopolizing a still competitive market.

Hence, it is not surprising that tying and bundling agreements evoked great scepticism among judges. This can best be illustrated by the 1949 *Standard Oil* case where the US-Supreme Court held that "tying agreements serve hardly any purpose beyond the suppression of competition".[21] In 1955, the report of the Attorney General's Committee to study the Antitrust Laws declared that "the purpose of a tying contract is monopolistic exploitation" since tying and bundling practices artificially extend the "market for the 'tied' product beyond the consumer acceptance it would rate if competing independently on its merits and on equal terms".[22] In the 1969 *Fortner Enterprises* Case, the US-Supreme Court confirmed his stance on tying and bundling practices by stating that "tying agreements generally serve no legitimate business purpose that cannot be achieved in some less restrictive way", therefore "the presence of any appreciable restraint on competition provides a sufficient reason for invalidating the tie".[23] Whenever a seller can exert some power over some buyers in the market, according to the US-Supreme Court, an appreciable restraint on competition can be presumed. The US Courts thus took a strict view on tying and bundling cases, resulting in a per se prohibition of these business practices.[24]

In Europe, too, lawmakers were quite sensitive about the competitive dangers of tying and bundling agreements. This can be illustrated by the German Zugabeverordnung which was enacted in 1932[25] as well as

[19] Jurian Langer, *Tying and Bundling as a Leveraging Concern under EC Competition Law* (Kluwer Law International 2007) at 19.
[20] Ward S. Bowman, 'Tying Arrangements and the Leverage Problem' [1957] Yale Law Journal 20.
[21] Standard Oil Co. v. United States, 337 U.S. 293 (1949).
[22] Report of the Attorney General's Committee to Study the Antitrust [1955] 145.
[23] Fortner Enterprises, Inc. v. United States Steel Corp. 394 U.S. 495 [1969].
[24] Christian Ahlborn, David Evans and Jorge Padilla, 'The Antitrust Economics of Tying: A Farewell to Per Se Illegality' [2004] Antitrust Bulletin 287 at 291.
[25] StF 9. 3. 1932, RGBl I 121.

by the 1934 Austrian Zugabegesetz,[26] which both included a far-reaching prohibition of tying and bundling agreements. These policy decisions have been particularly important for the evolution of tying and bundling in the EU: It has been convincingly argued that it is due to German negotiators that tying and bundling was explicitly mentioned as an example of abuse of market power in the Treaty of Rome.[27] Art 102 (d) – as well as Art 101 (e) TFEU – can arguably be traced back to German scepticism about the competitive effects of tying and bundling agreements. It can therefore be argued that European lawmakers – as well as US-American Judges – were aware of the harmful effects of tying and bundling practices and thus opted for a per se prohibition approach.

3.2. The Chicago School argument

The intuitive theory that tying and bundling results in a transfer of market power was questioned by scholars like *Director*,[28] *Stigler*,[29] *Bork*[30] and *Posner*.[31] Since they all called for a reform of antitrust policy based on a model focusing on welfare considerations,[32] they were named the Chicago School of Economics. Applying neoclassical price theory on tying and bundling practices, these scholars proclaimed the death of the leverage theory as it was applied by the courts in the early cases mentioned above.[33]

In essence, the adepts of the Chicago School claimed that a monopoly profit can be realized just once.[34] A business practice that results in a transfer of market power would, thus, not increase profits for the (double) monopolist and, as a consequence, monopolists do not have an incentive to engage in tying and bundling practices.[35] This principle called "one monopoly profit theorem" found great resonance in the discourse and is still discussed in recent publications;[36] not least because it

[26]Bundesgesetz vom 3. August 1934 über das Verbot von Zugaben zu Waren oder Leistungen, BGBl. II Nr. 196/1934.

[27]Matthew Cole, 'Ordoliberalism and Its Influence on EU Tying Law' [2015] ECLR 255, for a comprehensive insight into the history of European Competition law David Gerber, *Law and Competition in Twentieth-century Europe: Protecting Prometheus* (Oxford University Press 2001).

[28]Aaron Director/Edward Levi, 'Law and the Future: Trade Regulation' [1956] Northwestern Law Review 281.

[29]George Stigler, 'United States v. Loew's Inc.: A Note on Block-Booking' [1963] The Supreme Court Review 152.

[30]Robert Bork, *The Antitrust Paradox* (Free Press 1978) at 373.

[31]Richard Posner, *Antitrust Law: An Economic Perspective* (Univ of Chicago Press 1978) at 173.

[32]See eg for an introduction into the Chicago School model, Bork (n 30) at 107 et seq.

[33]See eg Louis Kaplow, 'Extension of Monopoly Power Through Leverage' [1985] Columbia Law Review 515.

[34]See eg Bork (n 30) at 365.

[35]Pietro Crocioni, 'Leveraging of Market Power in Emerging Markets: A Review of Cases, Literature, and a suggested Framework' [2007] Journal of Competition Law & Economics 449 at 455.

[36]See for instance Einer Elhauge, 'Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory' [2009] Harvard Law Review 397.

could be illustrated by examples that were comprehensible for non-economists as well. Assume – for example[37] – that a company offers two services: A ticket for the statue of liberty and guided tours through New York City. While it is market dominant when it comes to the access to the statue of liberty, the company operates its tours in a competitive market, meaning that tours are offered at marginal cost. For the sake of the example, let's assume that the marginal costs of tours are USD 20. Imagine that this company decides to bundle the services offered, meaning that they cannot be bought on a stand-alone basis anymore; since the market for tours is competitive, they are still available on the market, though. Consequently, consumers purchase the bundle only, if they attribute a higher value to the access to the statue of liberty than the price of the bundle reduced by the marginal cost of the tour. If the price for the bundle is set to USD 100, only consumers who are willing to pay at least USD 80 for visiting the statue of liberty would buy the bundle. However, the company could reap the same profits if it charges USD 80 for the statue of liberty alone – without bundling it to a tour. Moreover, offering the services without bundling could entice consumers that value tours at less than USD 20 to visit the statue of liberty. According to the Chicago School argument, it would therefore make no economic sense for a market dominant undertaking to leverage its market power to another market through tying and bundling agreements.

This raises the question why companies engage in tying and bundling practices, as they are a common phenomenon in different markets. According to *Bork*, there are four realistic explanations for that. First, tying and bundling could be used to evade price regulation, since the purchaser can be required to buy an unregulated product together with the regulated product.[38] Secondly, tying and bundling could be used to accomplish price discrimination.[39] Thirdly, tying and bundling agreements could result from economies of scale.[40] Finally, tying and bundling could be used for the protection of goodwill,[41] because on some occasions, the usefulness of a product depends on the quality of an essential component. Through tying and bundling, an undertaking can make sure that the poor performance of components offered by third parties is not

[37]This example is a slight variation of Nalebuff's illustration of the teachings of the Chicago School, see eg Barry Nalebuff, Bundling, Tying, and Portfolio Effects, DTI Economics Paper 1, 20. http://faculty.som.yale.edu/barrynalebuff/BundlingTyingPortfolio_Conceptual_DTI2003.pdf accessed 4 July 2018.
[38]Bork (n 30) at 376.
[39]Bork (n 30) at 377.
[40]Bork (n 30) at 378.
[41]Bork (n 30) at 379.

mistakenly attributed to its own products. Since none of these arguments directly harm competition, there is – according to the arguments of the scholars of the Chicago School – no need for competition law intervention against tying and bundling agreements.

3.3. The post-Chicago School findings

In the more recent economic literature, the limits of the Chicago School predictions are controversially discussed. Scholars like *Kaplow* and *Elhauge* emphasized that the arguments of the Chicago School concerning the effects of tying and bundling agreements are built on a number of highly restrictive assumptions: The tied or bundled products must be used in fixed proportions, the competitiveness in all related markets has to be fixed and there must be a strong positive demand correlation between the tied or bundled products.[42] Since the "one monopoly profit theorem" is deeply rooted in neoclassical price theory, there is also an assumption that consumers are perfectly informed[43] and that competition in the non-dominated market is perfectly competitive,[44] meaning inter alia that marginal costs are equal to marginal revenue. If just one of these assumptions is relaxed, tying and bundling may have anti-competitive effects in the short term and therefore the one monopoly profit theorem may lose explanatory power.[45]

By the same token, it was emphasized in numerous papers that tying and bundling agreements may yield anti-competitive effects in the long term. This constitutes a major limitation to the arguments brought forward by the adepts of the Chicago School as the framework they developed did not take into account long-run effects.[46] *Whinston* showed in his 1990 paper, that tying and bundling agreements signal a monopolist's willingness to engage in aggressive pricing in another, non-dominated market and thereby increases barriers to entry into this market.[47] By the same token, *Nalebuff* argues that tying and bundling practices may deprive market entrants of adequate scale and therefore may foreclose the non-dominated market.[48] Interestingly, he mentions that these practices are

[42]Elhauge (n 36) at 419.
[43]Van den Bergh/Camesaca, *European Competition Law and Economics* (Sweet & Maxwell 2001) at 279.
[44]Kaplow (n 33) at 536; Kobayashi, 'Does Economics provide a reliable guide to regulating commodity bundling by firms?' Jcle 707 at 733, Crocioni (n 35) at 458.
[45]See Langer (n 19) at 21.
[46]Kaplow (n 33) at 530.
[47]Michael Whinston, 'Tying, Foreclosure, and Exclusion' [1990] American Economic Review 837.
[48]Barry Nalebuff, 'Bundling as an Entry Barrier' [2004] Quarterly Journal of Business and Economics 159.

particularly attractive when marginal costs are low.[49] According to *Choi* and *Stefanadis*, tying and bundling may reduce the incentives to innovate in the non-dominated market.[50] In their 2002 paper, *Carlton* and *Waldmann* explore the effects of tying and bundling practices in the dominated market. In their model, they show that a market dominant undertaking may engage in tying and bundling in order to deter future entry into the dominated market.[51] They focus their analysis on markets that are undergoing rapid technological change and which are characterized by network effects. In conclusion, recent economic papers showed that the Chicago School argument does not apply to all cases; thus, there may be situations where tying and bundling agreements may have chilling effects on competition.

3.4. Repercussions on competition enforcement

Arguably, the academic discussion about the effects of tying and bundling practices were not left unheard by competition enforcers. It is argued that the theories of the Chicago School as well as more recent works have led to a change of the courts' approach towards tying and bundling in the US – switching from a per-se prohibition to a rule of reason approach.[52] For competition law authorities, this shift doubtlessly increased the efforts necessary to prove that tying and bundling agreements fall foul of competition law. Establishing a theory of harm in tying and bundling cases when the arguments of the Chicago School are applicable is particularly difficult. It is therefore hardly surprising that competition enforcers intervened first and foremost in cases where the applicability of the findings of the Chicago School was at least doubtful.

This is arguably one of the main reasons why most of the enforcement of tying and bundling cases took place in digital markets. Digital markets deviate significantly from the assumptions of the Chicago School for a variety of reasons. Most prominent is obviously the fact that marginal revenue in the digital environment is consistently higher than marginal costs. In economic literature, it is well established that digital goods are non-rivalrous, meaning that the consumption by one consumer does not prevent the simultaneous consumption by others. Furthermore,

[49]ibid at 162.
[50]Jay Choi/ Christodoulos Stefanadis, 'Tying, Investment and the Dynamic Leverage Theory' [2001] RAND Journal of Economics 51.
[51]Carlton/Waldmann, 'The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries' [2002] RAND 194.
[52]Ahlborn, Evans, Padilla (n 24) at 318 et seq.

digital goods fall into a specific group of non-rivalrous goods: Frequently, they are so called *infinitely expansible goods* since their quantity can be made arbitrarily large at practically no cost.[53] The marginal cost for digital goods therefore approximates 0, thus, marginal revenue equaling the marginal costs would make any investment in digital goods unprofitable. Another example for the imperfection of competition in digital markets are network effects, which frequently come along with digital goods. Network effects are defined by *Katz/Shapiro* as the fact that "the utility that a given user derives from the good depends upon the number of other users who are in the same 'network' as is he or she".[54] From an economic perspective, network effects can be called positive externalities because they cause benefits for third parties without these benefits being reflected by the market price.[55] Thus, it can be argued that digital markets have characteristics that are not reflected by the market models on which the Chicago School theories are built on. It is therefore doubtful, whether the arguments of the Chicago School are valid in the digital environment.

By the same token, the findings of the post Chicago School Scholars show that the Chicago School arguments have only limited relevance in digital markets. This issue was directly addressed by *Nalebuff* who argued that software is particularly conducive to bundling.[56] Recent economic papers acknowledge the competitive dangers tying and bundling practices indirectly have on digital markets. When *Charlton* and *Waldman* focus their analysis on markets which are characterized by rapid technological change and network effects, it is quite obvious that their findings could easily be used for digital markets. The predictions of the Post-Chicago papers are therefore frequently in contradiction to the Chicago School arguments when it comes to digital markets.

Furthermore, digital markets seem to be especially vulnerable when it comes to tying and bundling practices. It is frequently assumed that digital markets are so called winner-take-all markets, in which a single firm or technology vanquishes all others.[57] However, as *Shapiro* explains, "the information economy is populated by temporary monopolies [...]

[53]Danny Quah, 'Digital Goods and the New Economy' in Derek Jones (eds), *New Economy Handbook* (Emerald Group Publishing 2003) at 317.

[54]Michael Katz and Carl Shapiro, 'Network Externalities, Competition, and Compatibility' [1985] AER at 424.

[55]Joseph Farrell and Paul Klemperer, 'Coordination and Lock-In: Competition with Switching Costs and Network Effects' in Mark Armstrong and Robert Porter (eds), Handbook of Industrial Organization (North Holland 2007) at 2018.

[56]Nalebuff (n 48) at 162.

[57]This notion goes back to Carl Shapiro and Hal Varian, *Information rules* (Harvard Business Review Press 1998) at 177.

[that] will, more likely than not, be toppled in short order by an upstart with superior technology".[58] Increasing barriers to entry into a market and lower incentives to innovate, might transform a temporary monopoly into a stable monopoly which is not endangered of being toppled. Since tying and bundling practices – as it has been shown – might decrease incentives to innovate and deter market entry in the long run, they might cement a market dominant undertaking's position. Consequently, it may be particularly rewarding for market dominant undertakings in digital markets to engage in tying and bundling practices.[59]

These insights give a theoretical underpinning for the question, why the concept of tying and bundling was frequently raised in digital markets. It may well be that, resulting from the strong incentives for the dominant undertaking, tying and bundling is more prevalent in the digital environment than in other settings. Moreover, being aware of the jeopardy for digital markets, competition law enforcers may be particularly vigilant when it comes to business practices by dominant undertakings which might trigger a transfer of market power. This may also explain why competition authorities dedicated considerable time and resources to the cases against Microsoft and Google.

The fact that digital markets are particularly prone to leveraging practices may also have contributed to the metamorphosis of the concept of tying and bundling. From an economic perspective, it arguably is of no importance whether the transfer of market power is due to a contractual agreement or product design. Limiting the scope of the concept of tying and bundling to contractual tying as it is laid down in Art 102 (d) TFEU would give market dominant undertakings a carte blanche to resort to business practices which may result in a transfer of market power. Furthermore, it would represent an important lacuna in the regulation of market dominant undertakings. The solution to this problem was fairly obvious: The doctrine of tying and bundling had to be expanded. In the digital setting, it was applied to cases, where consumers were not coerced to demand supplementary products, but were *nudged* to do so.

4. Tying and bundling in the digital setting

The concept of tying and bundling is quite open for doctrinal evolution. This becomes apparent when looking at the tests that are applied on

[58]ibid at 173.

[59]These incentives are in my view augmented by the ambiguity in the economic discussion whether these practices should be deemed anticompetitive or not.

tying and bundling practices. According to the Guidance on the Commission's enforcement priorities in applying Article 82 EC,[60] the Commission takes action against market dominant undertakings when (i) the tying and the tied products are distinct products and (ii) the tying practice is likely to lead to anti-competitive foreclosure.[61] Of course, offsetting efficiencies also have to be taken into account.[62] In this section, it will be further analysed how the concept of tying and bundling is applied in the digital setting while following the structure suggested by the European Commission.

4.1. Separate products

The distinct products test somewhat stands out in the competition law discourse. In very few instances, the argumentative power of examples is more important than for this assessment. A non-exhaustive list of examples which are discussed in the literature includes shoes and shoelaces, mobile phones with integrated cameras and SIM-cards, cough syrup with pain-relieving essences, the Financial Times and crossword puzzles and many more. Often, the argumentation seems to be intuitively convincing, but it is questionable whether intuition is a good adviser for less obvious cases, as they frequently arise in the digital environment. According to the European Commission, it should be judged in accordance with consumer demand whether products should be deemed distinct – therefore gauging, if consumers would buy the products together in absence of the tying or bundling.[63] Therefore, following the often cited more economic approach, it may be necessary to develop a more general approach for the question whether two products should be deemed separate or not.

The European case law arguably entails some strong arguments for products which can*not* be considered distinct. If products are to be situated in the same market, they can most likely not be considered separate products. This goes back to the basic principle that markets should be defined by resorting to the concept of substitutability.[64] It could be argued that, from a competition law perspective, substitutability is the

[60]Commission, 'Guidance on the Commission's Enforcement Priorities in Applying Article 82 of the EC Treaty' 2009/C 45/02.
[61]Guidance on the Commission's enforcement priorities (n 60) at recital 47.
[62]Guidance on the Commission's enforcement priorities (n 60) at recital 62.
[63]Guidance on the Commission's enforcement priorities (n 60) at recital 52.
[64]Commission, 'Notice on the Definition of Relevant Market for the Purposes of Community Competition Law' 97/ C 372/03 at recital 15.

opposite of distinctness: If two products are similar enough to satisfy the same demand, they are usually not bought together in absence of tying or bundling. Therefore, as a first hypothesis, products can be deemed distinct if they are situated in different geographic or product markets.

This first hypothesis can be evaluated by assessing whether the distinct products test is structurally equivalent to market definition. Since in the case law of tying and bundling, the distinctness was mostly found in the product dimension and not in the geographic dimension,[65] emphasis will be placed on the delineation of the product market. The main forces that influence market definition are – as it is well established – demand substitution and supply substitution.[66] It therefore must be shown that these aspects are also crucial for the distinct products test.

When judging whether the tied products could be deemed distinct, the European institutions usually resorted to an analysis of demand. In the *Microsoft* case it is highlighted that "the distinctness of products for the purpose of Art 82 EC has to be assessed by reference to customer demand".[67] This could support the proposed first hypothesis: In case two products are to be situated in the same market, there is arguably no independent demand for one of the products, rather the demand for one product depends on the demand of the other. The purchase of one product reduces the demand for the substitutable product. If, on the other hand, consumers would purchase the tying product and the tied product separately, there is strong evidence that these products cannot be deemed substitutable.

Considerations related to the supply side may be taken into account for the distinct products test as well. The European Commission recognizes that undertakings specialized in the manufacture or sale offering the tied product without the tying product may be an indirect evidence of the existence of separate products.[68] In the *Microsoft* case, the European Commission inferred from the presence of multiple stand-alone media players that media players and operating systems must be deemed separate products.[69] Thus, it may be concluded that the distinct products test and market definition assess the same object – but under opposite signs.

Through an economic lens, it makes perfect sense to perceive the distinct products test as an assessment whether the products in question

[65]See for an example for tying and bundling in the geographic dimension, Commission Decision IV/26.760 *GEMA I* (OJ L 166, 24.7.1972, p 22–23).
[66]Notice on the definition of relevant market (n 64) at recitals 15 et seqq.
[67]*Microsoft* (n 3) at recital 917.
[68]Guidance on the Commission's enforcement priorities (n 60) at recital 52.
[69]Commission Decision, COMP/C-3/37.792 *Microsoft* (OJ L 32, 6.2.2007, p 23–28) at recital 804.

have to be situated in different markets. Leveraging can only be possible when at least two different markets – a dominated and a non-dominated market – are involved. If two products of the same market are tied or bundled, the only competition concern could be predatory pricing or rebates. Structurally, the distinct products test and market definition are similar, since both take account of demand and supply characteristics. Therefore, it can be argued that separate products (within the meaning of the tying doctrine) are necessarily situated in different markets. This may clarify the distinct products test, since in the digital environment, it frequently is non-intuitive whether two products are separate by nature. The well-established framework of market delineation could thus make the distinct products test more transparent.

When analysing tying cases in the digital setting, there is strong evidence that market definition is a crucial component of the distinct products test. The best example for that is arguably the *Google Shopping* case in which the European Commission analysed the distinctness of products when dealing with market definition.[70] In the *Microsoft* cases, it was clearly established that tied products have to be placed in different markets, although it was further analysed whether media player software and operating systems should be deemed separate products; interestingly, the European Court of First Instance also commingled market definition and the distinct products test.[71]

Yet, being situated in different markets does not necessarily mean that the separate-product test is fulfilled. One could think of set-ups where tying or bundling of two products, which have to be situated in different markets, may not result in a transfer of market power. This is, for instance, the case when there is a demand for the individual good that is independent of the respective demands for the tied or bundled goods.[72] Product integration may serve as an example for that phenomenon: If a painkiller is combined with a soporific, resulting in an anti-depressant, it can be argued that this technical tying does not result in a transfer of market power. Rather, the combination is necessary to meet a demand that is independent of the demand for painkillers and soporifics. When the tied and bundled product creates its own demand, which is independent of the respective demands, a transfer of market power may thus be excluded.

[70] *Google Search (Shopping)* (n 4) at recital 151.
[71] *Microsoft* (n 3) at recital 921.
[72] Maurits Dolmans and Thomas Graf, 'Analysis of Tying Under Article 82' [2004] World Competition 225.

Another, more contentious issue is, whether the distinct-market-test should exclude cases where there is no significant demand for the market dominant product without tying or bundling.[73] This can be illustrated by an example which was cited by the European Court of First Instance: If there is an independent demand for shoelaces and shoes with shoelaces but not for shoes without shoelaces, tying shoelaces to shoes can never constitute an abuse of market dominance.[74] From an economic perspective, leveraging can be excluded when there is no market without the tying or bundling to transfer the market power from. This argument was raised by *Microsoft* when stating that customers did not want Windows without media functionality,[75] which was rejected by the European Court of First Instance. However, the reasoning of the Court is not entirely convincing with regards to the argument that "it is quite possible that customers will wish to obtain the products together, but from different sources".[76] Yet, this requires that there is a demand for both products. If Microsoft would have proven that there is indeed no demand for operating systems without multimedia, the claim of market abuse should arguably have been dismissed. In this case, consumers obviously do not wish to obtain products together but from different sources. Even though it is well established that a market dominant undertaking has special responsibilities, it would reach too far to force them to offer products and services that are not in demand.

4.2. Coercion

For the concept of tying and bundling, it was long established wisdom that consumers had to be coerced to purchase the bundled and tied products together.[77] This relates to the wording of Art 102 (d) TFEU which indicates that some level of compulsion may be required. However, the requirement that customers have to be forced to purchase the products together was always at odds with the concept of mixed bundling, since there is no compulsion, but merely a financial incentive to buy the products together. Therefore, in the *Microsoft* case, the ECFI clarified this issue by stating that

[73]Robert O'Donoghue/Jorge Padilla (n 6) at 619.

[74]Case T-86/95, *Compagnie générale maritime* [2002] ECLI:EU:T:2002:50, at recital 261.

[75]*Microsoft* (n 3) at recitals 919 et seqq.

[76]*Microsoft* (n 3) at recital 922.

[77]In the German discussion, some commentators still see coercion as a constitutive requirement for tying and bundling, see eg Oliver Brand in Frankfurter Kommentar zum Kartellrecht, Art 102 at recital 514.

> [N]either Article 82 (d) EC nor the case-law on bundling requires that consumers must be forced to use the tied product or prevented from using the same product supplied by a competitor of the dominant undertaking in order for the condition that the conclusion of contracts is made subject to acceptance of supplementary obligations to be capable of being regarded as satisfied.[78]

This reasoning is in line with the economic concept of leveraging. Although compulsion to buy an additional product together with the market dominant product regularly results in a transfer of market power, this can also be the case when there is a mere incentive to do so. These incentives might be of financial nature, like in the case of mixed bundling. But it is conceivable to think of incentives which are based on the bounded rationality of consumers.[79] If a market dominant undertaking nudges consumers to choose a product by making use of their lack of rational choice, there may be a risk that it extends its market power to another, still not dominated market.

The *Microsoft* cases serve as a good example for how a market dominant undertaking may exploit consumer inertness to transfer market power. By integrating Internet Explorer and the Windows Media Player into the operating system Windows, there was a clear incentive for consumers to use Microsoft's internet browser and not to choose another application. That was proven by empirical studies conducted by the European Commission, showing that, at that time, more than 50% of Windows users did not download web browsers from the internet or were reluctant to do so; out of this group, 31% did not know how to install or download software.[80] Consequently, there was a strong incentive to use the preinstalled software for many consumers.

In recent cases, it was questioned whether a bias that consumers tend to choose the most prominently displayed products may trigger a transfer of market power and should thus be prohibited. In the digital environment, this concern was raised in the merger between *Microsoft* and *LinkedIn* because Microsoft not only planned to preinstall the LinkedIn application, but also wanted to integrate LinkedIn prominently as a tile to the Windows 10 Start Menu and as an icon on the desktop.[81] The European Commission considered that the pre-installation of a LinkedIn application could lead to a significant increase in LinkedIn membership and user

[78] *Microsoft* (n 3) at recital 970.
[79] Nicolas Petit and Norman Neyrinck, 'Behavioral Economics and Abuse of Dominance: A Fresh Look at the Article 102 TFEU Case-Law' [2010] ÖZK 203.
[80] *Microsoft (Tying)* (n 12) at recitals 50 et seqq.
[81] Commission Decision Case M.8124, *Microsoft/LinkedIn*, at recitals 315 et seqq.

activity, which may foreclose competing providers of similar services. Hence, Microsoft had to commit to not integrating the LinkedIn application into the Windows operating system.[82] In the *Google Shopping* case, the European Commission conducted a survey on how the ranking in the search results sways consumers' choices. According to this study, the rank of a given link in the search results has a major impact on the click rates of that link, irrespective of the relevance of the underlying page. Moving the first search result to the 3rd rank led to a reduction in clicks by around 50%, a move to the 10th rank triggered a traffic decrease by 85%.[83] In light of these findings, the European Commission concluded that the prominent ranking of Google's own comparison shopping services constitutes an abuse of market dominance because Google could transfer its market power from the market for general search to the market for comparison shopping. Thus, exploiting consumer bias in order to foster products in non-dominated markets is tantamount to making the sale of one product contingent on the sale of another product.

4.3. Foreclosure of competitors

4.3.1. The market foreclosure test

The outcome of most cases of tying and bundling will arguably hinge on whether or not market foreclosure can be established. This constitutes the last step of a test that aims at dividing harmless or even pro-competitive business practices (as described by the scholars of the Chicago School) from pernicious business practices resulting in a transfer of market power. Even though it might be the most important part of the assessment of tying and bundling practices, market foreclosure is – at least for lawyers – arguably the most difficult criterion to grasp.

The European Court of Justice is unequivocal when determining how the assessment of foreclosure should be conducted. In the *Post Danmark I* case, it was stated that foreclosure "seeks to determine whether the conduct of the dominant undertaking produces an actual or likely exclusionary effect, to the detriment of competition and, thereby, of consumers' interests".[84] The requirement of market foreclosure therefore involves an analysis of the business practice's effects on the market. Requiring a proof of market foreclosure thus means a

[82]*Microsoft/LinkedIn* (n 81) at recital 438.
[83]*Google Search (Shopping)* (n 4) at recital 460.
[84]Case C-209/10, *Post Danmark I* [2014] ECLI:EU:C:2012:172, at recital 44.

departure from a per-se prohibition, since it depends on the specific (market) circumstances of each case whether tying and bundling practices fall foul of competition law. It is therefore up to the claimant or the competition authority to develop a robust theory of harm.

In various rulings, the European Court of Justice specified the requirements for proving market foreclosure. On the one hand, the European Court of Justice alleviated the burden of proof for the claimant in several judgements. First and foremost, it is – according to the often cited *Continental Can* judgement – not necessary to show that consumers are ultimately harmed by the business conduct;[85] it is sufficient to prove that a business practice harms competition. The European Court of Justice, thus, considers the competitive process to be a proxy for consumer welfare; every time competition is distorted by a business practice, there is a presumption that consumers are harmed, which is perfectly in line with the concept of Art 101 (1) and Art 101 (3) TFEU. By the same token, there is – according to the *Post Danmark II* Judgement – no *de-minimis* threshold when it comes to the assessment of anticompetitive effects.[86] This is doubtlessly an important relief for the claimant, as he or she is not required to quantify the extent of the foreclosure, which arguably would be an excessively difficult task in complex economic settings.

On the other hand, the European Court of Justice also set down requirements for proving foreclosure. A basic principle that the European Court of Justice reiterated in recent rulings[87] is that the assessment of the market foreclosure has to be carried out in light of all relevant circumstances.[88] This principle may be interpreted as a requirement for the completeness of a theory of harm: If the defendant can show that the theory of harm brought forward by the competition authority or the claimant did not include all relevant circumstances, the claim must be dismissed.

It is therefore essential to know which circumstances are relevant of establishing – or attacking – a theory of harm. At the outset, the notion of circumstances as it is commonly used in the European case law seems to relate to the factual details of a case. Circumstances deemed relevant for showing market foreclosure by the European Court of Justice included market coverage,[89] the short duration of the practices at issue,[90] capacity

[85]Case 6/72, *Continental Can* [1973] *ECLI*:EU:C:1973:22, at recital 26.
[86]Case C-23/14, *Post Danmark II* [2015] ECLI:EU:C:2015:651, at recital 73.
[87]And which – to my mind – is systematically underestimated in the legal literature.
[88]*Post Danmark II* (n 86) at recital 68; Case C-413/14P, *Intel* [2017] ECLI:EU:C:2017:632, at recital 142; Case C-525/16, *MEO* [2018] ECLI:EU:C:2018:270 at recital 28.
[89]*Intel* (n 88) at 116.
[90]*Intel* (n 88) at 117.

constraints[91] and the cost structure.[92] This is arguably an important restriction of the judicial review of foreclosure: The courts do not primarily focus on the question of how the specific facts of each case effect competition, which regularly requires complex economic analyses; they rather assess the facts theses analyses are built on. This approach is well established when it comes to complex considerations of economic arguments: According to the established case law, the judicial review of market definition is limited to whether or not the contested decision is based on materially incorrect facts, or is vitiated by an error of law or misuse of powers.[93] As for the weighting of complex economic arguments, European courts metaphorically only inspect the fundaments, but do not conduct a full-fledged structural analysis of the theory of harm brought forward, thereby leaving much room for the European Commission to decide how to prove market foreclosure.

From this perspective, the essence behind the necessity to include all relevant circumstances becomes clearer. As a principle, relevance relates to an economic analysis neglecting some circumstances of the case at hand: If it can be shown that including additional circumstances would invalidate, in full or in part, the theory of harm brought forward by the claimant, these circumstances are clearly relevant for proving market foreclosure. The evidence relied on must therefore contain all the relevant information which must then be taken into account in order to assess a complex situation.[94]

4.3.2. Necessity to show market foreclosure in tying and bundling cases

It is not uncontentious whether market foreclosure has to be established in tying and bundling cases. Even though in the Guidance Paper, the European Commission explicitly recognizes the need to show market foreclosure, some reputable voices in the legal literature argue that leveraging abuses such as tying and bundling are prohibited per se because they are incompatible with competition on the merits.[95] These views are mainly based on the *Hilti*[96] and the *Tetra Pak II*[97] cases before the European institutions and relate to the perspective of a Pre-Chicago School

[91] *Intel* (n 88) at 118.
[92] AG Wahl C-525/16, *MEO* [2017] ECLI:EU:C:2017:1020, at recital 109.
[93] Case T-115/99, *SEP* [2001] ECLI:EU:T:2001:54, at recital 34.
[94] Case C-67/13P, *Groupement des cartes bancaires* [2014] ECLI:EU:C:2014:2204, at recital 46.
[95] Thomas Eilmansberger, 'How to Distinguish Good from Bad Competition under Article 82 EC' [2005] Common Market Law Review 129 at 154; Pablo Ibáñez Colomo, 'Beyond the "More Economics-Based Approach": A Legal Perspective on Article 102 TFEU Case Law' [2016] CMLR 709 at 717 et seqq.
[96] *Hilti* (n 8).
[97] *Tetra Pak II* (n 9).

thinking that posits that leveraging practices are always pernicious for competition. Yet, with regard to more recent developments in economic thought, there are good reasons to believe that leveraging practices are not always harmful, but may also yield welfare enhancing effects. As it has been shown above, it may depend on the circumstances of each case whether leveraging practices such as tying and bundling have chilling effects on competition. However, from the perspective of what the law *should be*, there seems to be quite unanimous consent that the effects of tying and bundling agreements should be assessed on a case by case basis.[98]

Arguably, it is very doubtful whether the *law as it stands* includes a per se prohibition of tying and bundling. This is, of course, due to the fact that the findings in the *Hilti* and *Tetra Pak II* cases – apparently supporting a per-se approach – can hardly be generalized. In the *Hilti* case, Hilti conceded that its behaviour – including the tying of the sale of nails to the sale of cartridge strips – "could have amounted to an abuse had it enjoyed a dominant position".[99] Since Hilti's market dominance could be established, it is hardly surprising that the Court did not review the European Commission's – admittedly quite superficial – analysis of the effects, which was not called into question by Hilti.[100] In the *Tetra Pak II* case the European Commission and the European Courts had to deal with a plethora of different business practices – among them predatory pricing, discrimination and tying. The core of the claim was that Tetra Pak made big concessions when selling its equipment[101] but tied the machines to the supply of cartons; Tetra Pak was the only undertaking offering both, equipment and cartons.[102] According to the European Commission, these business practices geared to the same end: Limiting competition to the market for equipment by making costumers totally dependent on Tetra Pak for the entire life of the machine.[103] Before the Court of First Instance, Tetra Pak did not call into question the European Commission's assumption that these practices were intended to forestall competitors, rather it was claimed that the separate product criterion was not met. Hence, in both the *Hilti* case and the *Tetrapak II* case, the defendants did not

[98]Pablo Ibáñez Colomo calls for a refinement of some features of Art 102 TFEU, arguably resulting in an effects based approach for tying and bundling practices, see eg Pablo Ibáñez Colomo(n 90) at 734 et seqq.
[99]*Hilti* (n 8) at recital 91.
[100]Commission decision IV/30.787, *Hilti* (OJ L 65, 11.3.1988, p 19–44) at recitals 50 et seqq.
[101]Commission decision IV/31.043, *Tetra Pak II* (OJ L 72, 18.3.1992, p 1–68), at recital 68.
[102]ibid at recital 16.
[103]ibid at recital 146.

raise the argument before the European Courts that the European Commission failed to show the effects of the tying practice.

The scope of legal review of decisions by the European Commission is determined by Art 263 TFEU. According to this provision, the European Courts can review acts by the Commission on the grounds of (i) lack of competence, (ii) infringement of an essential procedural requirement, (iii) infringement of the Treaties or any rule of law relating to their application or (iv) misuse of powers. It is established that, while lack of competence[104] and infringement of an essential procedural requirement[105] must be raised by the community judicature of its own motion, an infringement of a rule of law relating to the application of the Treaty can be examined by the European Courts only if it is raised by the applicant.[106] Thus, it cannot be argued that the European Courts endorsed a per-se prohibition of tying and bundling practices; rather they may have been prevented from examining this question on procedural grounds.

What is more, the case law on unfair commercial practices may support the argument, that there is a need to show the effects of tying and bundling cases in every individual case. The European Court of Justice held that linking together two different offers cannot be regarded as unfair without a case-by-case assessment;[107] rather there is a need to show that this practice materially distorts or is likely to materially distort the economic behaviour of the average consumer with regard to the product.[108] This may be a strong hint that according to the European Court of Justice the repercussions of tying and bundling cases may vary in each case; therefore the effects of these practices have to be evaluated in each and every case.

4.3.3. Market foreclosure and digitization

In the context of tying and bundling, the question whether foreclosure has to be shown is quite hypothetical, though. This is due to the requirement that the theory of harm has to include all relevant circumstances – especially if they were raised by the defendant. The mere claim of the defendant that the one monopoly profit theorem applies to his case will have far reaching implications for the procedure: The claimant or the competition authority will have to show that the predictions of the

[104]Case 110/81, *Roquette Frères* [1982] ECLI:EU:C:1982:323, at recital 34.
[105]Case C-389/10P, *KME Germany* [2011] ECLI:EU:C:2011:816, at recital 131.
[106]Case T-51/89, *Tetra Pak* [1990] ECLI:EU:T:1990:41, at recital 13; Case C-367/95, *Sytraval* [1998] ECLI:EU:C:1998:154, at recital 67; Case T-177/07, *Mediaset* [2010] ECLI:EU:T:2010:233, at recital 140.
[107]Case C-310/15, *Deroo-Blanquart* [2016] ECLI:EU:C:2016:633, at recital 30.
[108]ibid at recital 32.

Chicago School do not apply and that the tying and bundling practice is, in the present case, anticompetitive. Effectively, there will most probably be a need to demonstrate market foreclosure in every case of tying and bundling.

It is, consequently, not surprising that in more recent cases of tying and bundling in the digital economy, market foreclosure was extensively analysed. The European Commission described meticulously how the tying or bundling practice could harm competition. In the *Microsoft* case, the analysis of the effects was elaborated on 44 pages,[109] in the *Google Search* case, it counted more than 70 pages.[110] The sheer volume of these analyses illustrates the importance the European Commission attaches to proving market foreclosure. Moreover, this shows how difficult it is to show that digital markets are hampered by a business conduct. The theories of harm established by the European Commission in these cases were arguably inspired by the findings of the Post-Chicago scholars: There was an extensive analysis of the role of network effects and the repercussions of the conduct on innovation in digital markets. This shows that economic thought is deeply entrenched in the assessment of foreclosure: Economic theory delivers guidance to the question, which circumstances may be relevant for tying and bundling cases in the digital environment. In the context of tying and bundling, it is, moreover, necessary to resort to economic theory in order to identify cases where this conduct may have chilling effects on competition. The length of the analysis of market foreclosure may, therefore, be a signal that tying and bundling practices based exploiting consumer bias may fall foul of competition law in very few economic circumstances only.[111]

5. Tying and bundling in the digital setting

Digitization was undeniably a catalyser for the doctrine of tying and bundling. Starting from a narrow scope of application that compromised contractual arrangements only, it developed into a concept to deal with self-preferencing in the digital context. But what were the repercussions this evolution had on the concept of tying and bundling?

[109] *Microsoft* (n 69) at recitals 835–954.

[110] *Google Search (Shopping)* (n 4) at recitals 444–643.

[111] In the *Rio Tinto Alcan* Case – a contractual tying case in the brick-and mortar economy, the European Commission concluded, albeit as a preliminary conclusion under Art 9 of Regulation 1/2003, on only 4 pages that this business conduct results in market foreclosure. See Commission Decision, AT.39230 Rio Tinto Alcan [2012] at recitals 66–85.

From a legal point of view, there is arguably no difference between tying and bundling in the digital environment and tying and bundling in brick-and-mortar markets. The reasoning behind the concept of tying and bundling applies irrespective of digitization, although it is the specific economic setting of digital markets that let this doctrine evolve. As has been discussed, tying and bundling practices may not only be more prevalent in the digital setting, they also tend to be more harmful for competition than in brick-and-mortar-markets. Yet, the argument that product integration or self-preferencing may result in a transfer of market power may also apply for typical analogue markets like grocery stores.

Is it necessary to apply the standards that were developed for a company like Google to a market dominant grocery store placing store branded products more visibly in the shelves? The competitive danger of placing their own products more favourably than the competitors' products is equal in both environments. Therefore, the evolution of the case-law on tying and bundling may contribute to a more consistent view on business practices that may result in a leveraging of market power: All practices that may lead to a transfer of market power from the dominated market to another market may be deemed an abuse of dominance. Therefore, a business conduct that yields incentives to choose supplementary products or services may fall foul of competition law – irrespective of the industry that is affected by this conduct. It is through the application of an extended doctrine of the tying and bundling concept that these dangers for competition can be dealt with.

Is it likely that a market dominant grocery store will be treated like Google? There is clear evidence in the economic literature that practices such as tying and bundling do not necessarily result in a leveraging of market power. In many cases, the findings of the Chicago School might be valid, meaning that tying and bundling agreements are at least neutral from the perspective of competition. Therefore, it is inevitable to evaluate the competitive effects of the conduct in question in each individual case. Due to the specific economic characteristics of digital markets, tying and bundling practices may be particularly harmful. This may be a reason why intervention against tying and bundling practices took place especially in digital markets: In this context, it was possible to establish a theory of harm. In the analogue world, however, it might be very difficult to find a case, in which e.g. the preferential treatment of one's own products results in market foreclosure.

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