

**World Economics Association  
Conferences, 2017**

**Public Law and Economics: Economic Regulation and Competition Policies**

**2017, n.1: 1st June – 30th June 2017**

**Title of paper:**

**PREDATORY INNOVATION: THE DEFINITE NEED FOR LEGAL  
RECOGNITION**

**Author of paper:**

**Thibault Schrepel**

# PREDATORY INNOVATION: THE DEFINITE NEED FOR LEGAL RECOGNITION

*Thibault Schrepel*

*Ph.D., LL.M.<sup>1</sup>*

## TABLE OF CONTENTS

I.	INTRODUCTION .....	
II.	THE PRACTICES OF PREDATORY INNOVATION .....	
	<i>A. Examination of the Different Classifications for Predatory Innovation .....</i>	
	1. <i>Presentation of Existing Classifications .....</i>	
	<i>a. Explicit and Implicit Classifications .....</i>	
	<i>b. Criticism and Utility of These Classifications .....</i>	
	2. <i>Proposal for a New Dichotomy .....</i>	
	<i>a. Our Proposal: Modification of a Platform or an Independent Product .....</i>	
	<i>b. The Usefulness of the Suggested Dichotomy.....</i>	
	<i>B. The Different Implementations of Predatory Innovation.....</i>	
	1. <i>Practices That Fall Outside the Scope of Predatory Innovation.....</i>	
	<i>a. The Design of Digital Platforms .....</i>	
	<i>b. Content Integration Within Platforms.....</i>	
	2. <i>Practices Falling Within the Scope of Predatory Innovation .....</i>	
	<i>a. The Change of the Platform Type.....</i>	
	<i>b. Product Modification in a Way to (Partially) Remove Compatibilities .....</i>	
III.	THE NEED FOR AN INDEPENDENT LEGAL REGIME FOR PREDATORY INNOVATION.....	
	<i>A. Parallels and Disparity Between Predatory Innovation and Technological Tying.....</i>	
	1. <i>The Legal Regime of (Technological) Tying.....</i>	
	<i>a. The General Rules of Tying.....</i>	
	<i>b. Technological Tying: different from General Tying?.....</i>	
	2. <i>The Apparent Parallelism Between Technological Ties and Predatory Innovation .....</i>	
	<i>a. The Visible Similarity of the Two Mechanisms.....</i>	
	<i>b. Regarding the Plea for Single Legal Regime.....</i>	

---

<sup>1</sup> Thibault Schrepel has a Ph.D. in international antitrust law. He also holds an LL.M. as well as a Master's Degree from Paris-Saclay (France). He writes in a number of law reviews as well as for *Revue Concurrentialiste*, which he created. His main areas of focus are innovation, high-tech monopolization and nontariff strategies.

- B. *The Absolute Necessity to Acknowledge an Independent Legal Regime*.....
- 1. *The Impossible Applicability of the Legal Regime for Technological Tying* .....
- a. *The Inaccuracy of the Legal Regime for Technological Tying*.....
- b. *Insufficiencies in the Legal Regime for Tying*.....
- 2. *Predatory Innovation as an Autonomous Legal Regime*.....
- a. *The Singularity of Predatory Innovation* .....
- b. *An Autonomous Legal Regime Designed to Incentivize Investments* .....
  
- IV. CONCLUSION.....

## ABSTRACT

In recent years, there has been an increasing interest in high-tech markets. The existing body of research on the topic suggests that such markets lead to reinterpret antitrust law key concepts – which should be done. There is little published literature, however, on the subject of the new anti-competitive strategies nestle in these markets, which this paper addressed.

It is widely recognized that the process of competition generally encourages companies to lower their prices, which benefits the consumer. And yet, in certain specific cases, antitrust rules intend to sanction predatory prices because they eliminate the competitive process itself. A similar situation applies to innovation. Innovation is one of the main bases for competition between companies and it is beneficial to consumers who may enjoy new products which are also better suited to their needs. But certain “*innovative*” behaviors are considered as being predatory and are punished accordingly, despite the fact that no legal concept specifically addresses this issue.

This absence of a legal category specifically dedicated to anti-competitive practices disguised as “*innovation*” leads judges to create numerous type I and II errors. The jurisprudence didn’t yet generalize the etiquette of “*predatory innovation*,” which nevertheless answers some of the modern problems encountered by antitrust law with high-tech markets development.

This article seeks to substantiate the value of this notion. Because many practices in high-tech markets are simultaneously occurring on several continents at once – the new version of software is generally available at the same moment around the world – we chose to carry out a comparative analysis between the United States and Europe. We are doing so because these two bodies of antitrust law may learn from each other – they have homologous roots – and also because the concerned countries have the highest GDP in the world.

The main objective of this paper, in the first instance, is to portray the practices that can and should be condemned as predatory innovation. And in fact, most predatory innovation practices are currently addressed under the label of “*technological tying*.” The creation of some legal rules dedicated to predatory innovation would lead to removing this legal concept and to create – instead – a more coherent legal regime – in both continents – that could be understood by business leaders.

“I do not know if this tiger recognized his prey”<sup>2</sup>  
Racine, *Esther*

## I. INTRODUCTION

It is widely recognized that the process of competition generally encourages companies to lower their prices, which benefits the consumer. And yet, in certain specific cases, antitrust rules intend to sanction predatory prices because they eliminate the competitive process itself. A similar situation applies to innovation. Innovation is one of the main bases for competition between companies and it is beneficial to consumers who may enjoy new products which are also better suited to their needs. But certain “*innovative*” behaviors are considered as being predatory and are punished accordingly, despite the fact that no legal concept specifically addresses this issue.

This absence of a legal category specifically dedicated to anti-competitive practices disguised as “*innovation*” leads judges to create numerous type I and II errors. The jurisprudence didn’t yet generalize the etiquette of “*predatory innovation*,” which nevertheless answers some of the problems encountered by antitrust law with high-tech markets development. The apparent courts lack of interest in that notion has led the doctrine to devote few studies to the subject, which has accentuated judges’ reluctance to use it, and so on.

Our study seeks to substantiate the value of the notion of “*predatory innovation*,” which covers a wide range of practices – many of which are not reached by actual antitrust rules. The development of a dedicated legal regime is a necessity which must be promptly answered.

In fact, the terms of “*predatory innovation*” – which we define as the alteration of one or more technical elements of a product to limit or eliminate competition – describes all practices that, under the guise of real innovations, are anti-competitive strategies aimed at eliminating competition without benefiting consumers. They may take two different forms – (i) the modification of a technological platform (ii) and/or the technical design of a product – throwing at removing the compatibility of third party technologies with those of a dominant firm, or at impairing competing technologies operations. As of today, antitrust law provides no satisfactory answer to these strategies.

It is common to see that many practices in high-tech markets are simultaneously occurring on several continents at once – the new version of software is generally available at the same moment around the world. For that reason, we chose to carry out a comparative study between the United States and Europe, first because these two bodies of antitrust law may learn from each other – they have homologous roots – and also because the countries involved have the highest GDP in the world.

---

<sup>2</sup> This quote, dated from 1689, reminds us that predatory practices imply a prey, and that preys would be better off if they could identify their predators.

The main objective of this paper, in the first instance, is to portray the practices that can and should be condemned as predatory innovation (I). This article questions, in substance, what predatory innovation is, and exposing the multiplicity of these practices – and their frequency – necessarily leads to bring the need to create a specific legal regime (II).

Most predatory innovation practices are currently dealt with under the label of “*technological tying*.” The creation of some legal rules dedicated to predatory innovation would then lead to removing this legal concept and to create – instead – a more coherent legal regime – in both continents – that could be understood by business leaders. Indeed, the creation of an autonomous legal regime for predatory innovation will ensure not to suffer the consequences from the legal uncertainty surrounding the notion of technological tying; not to be subjected to differences of interpretation depending on whether the practices are committed in Europe or in the USA; to address many practices that cannot be caught under the legal regime of technological ties and to provide judges the opportunity to conduct a comprehensive analysis.

## II. THE PRACTICES OF PREDATORY INNOVATION

Our paper intends, in the first instance, to portray the practices that can and should be condemned as predatory innovation. This is all the more necessary as these practices tend to develop exponentially. One of high-tech markets specificities is the ability for companies to continually improve their products that already are on the market, creating, in fact, a multitude of opportunities to reduce competition.<sup>3</sup> The system of digital updates (sometimes automatic), for instance, allows a dominant firm to impose a predatory strategy to its users, depriving them of any possibility of rejecting the product new version in the short term.<sup>4</sup> A company can thus create as many predatory strategies as it updates one of its products. These are, in other words, “*post-innovation practices*” appearing once the product is put on the market.<sup>5</sup>

The newness of these strategies has been the subject of some developments in the North American legal doctrine,<sup>6</sup> but it remains non-existent in Europe,<sup>7</sup> even though the general literature seems to be willing to consider it more and more as exposed below:

---

<sup>3</sup> Randal C. Picker, *Rewinding Sony: The Evolving Product, Phoning Home and the Duty of Ongoing Design*, 55 CASE W. RES. L. REV. 749, 751 (2005): “Design ceases to be a one-time event and instead becomes a continuous process. And that is true not only for the next product sold, but also for the entire installed base. The dead hand of the past and the constraints of backwards compatibility are lifted.”

<sup>4</sup> This is also what underlines John M. Newman, *Anticompetitive Product Design in The New Economy*, 39 FLA. ST. U. L. REV. 681, 708 (2012).

<sup>5</sup> For more development on this notion of “*post-innovation*” as opposed to “*pre-innovation*,” see Jonathan B. Baker, *Evaluating Appropriability Defenses for the Exclusionary Conduct of Dominant Firms in Innovative Industries*, 80 ANTITRUST L.J. 431 (2016).

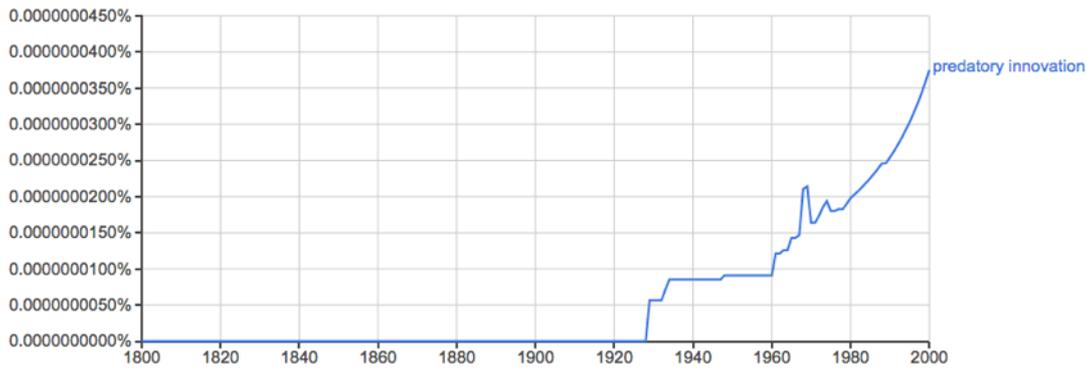
<sup>6</sup> One author underlined the possibility to apprehend predatory innovation from a “*free speech*” angle, see Hillary Greene, *Muzzling Antitrust: Information Products, Innovation and Free Speech*, 95 B.U. L. REV. 35 (2015). Because this notion is inoperative in Europe and because our study is focused on antitrust law only, we will not mention it any more.

<sup>7</sup> Yet, predatory innovation is a non-tariff strategy that can appeal to many companies, see Terry Calvani, *Non-Price Predation: A New Antitrust Horizon*, 54 ANTITRUST L.J. 409, 410 (1985): “Let’s take a minute and explore why an individual or group might undertake such a course of conduct. Why might non-price predation be an attractive strategic policy? (...) non-price predation is safer than its cousin, price predation.”

It is a matter of recognizing that all predatory practices do not imply a price strategy. Companies can also implement less expensive eviction by using other variables.

On non-tariff predation, see Susan A. Creighton, then director of the Federal Trade Commission's Bureau of Competition, who describes these practices as “*cheap*,” stressing that they cost little to the company that puts them into practice and that they have no pro-competitive quality, Susan A. Creighton, *Cheap Exclusion*, speech at the Charles River Associates 9th Annual Conference, Current Topics in Antitrust Economics and Competition Policy, 8 February 2005.

See also Andrej Fatur, *Information and Communication Technology Network Industries and EU Competition Policy*, King’s College London (2009), pt. 4.4.2.2.2.2: “As unlikely as predation is, there are several additional reasons why network effects may make predation more likely”.



*Graph generated via Google Ngram Viewer<sup>8</sup>*

The fact that we have not been able to identify any European legal studies specifically dedicated to predatory innovation on high-tech markets reinforce the usefulness of our study to the extent that the New Economy involves an infinite renewal of products/product features which must be analyzed. It is then necessary to identify the different classifications (A.) allowing to apprehend predatory innovation practices, in order to determine which types of practices can be labeled as such (B.).

#### *A. Examination of the Different Classifications for Predatory Innovation*

Different classifications have been conceived for predatory innovation practices. An appropriate nomenclature makes it possible to define which practices must be condemned and thus can be used by judges and authorities in order to concentrate their efforts on the practices which actually require it.<sup>9</sup>

We will then examine all of the classifications which have been recognized by the European and North American doctrine (1.). Although none of them is sufficient, they all contribute to the creation of a new and more efficient dichotomy (2.).

<sup>8</sup> Google Ngram Viewer. To access the results of this search, see [https://books.google.com/ngrams/graph?content=predatory+innovation&year\\_start=1800&year\\_end=2000&corpus=15&smoothing=20&share=&direct\\_url=t1%3B%2Cpredatory%20innovation%3B%2C%0](https://books.google.com/ngrams/graph?content=predatory+innovation&year_start=1800&year_end=2000&corpus=15&smoothing=20&share=&direct_url=t1%3B%2Cpredatory%20innovation%3B%2C%0) [<https://perma.cc/4EHC-63QC>].

On the x-axis is the years of publication and on the y-axis is the percentage of the literature dealing with the concept of “predatory innovation” compared to the entire Google Books database.

<sup>9</sup> In 1982, James D. Hurwitz and William E. Kovacic stressed that the notion of innovation was ill-defined. For reasons that we ignore, this statement has lost none of its veracity, more than 30 years later, see **James D. Hurwitz & William E. Kovacic, *Judicial Analysis of Predation: The Emerging Trends*, 35 VAND. L. REV 63, 66 (1982)**. See also **Thomas J. Campbell, *Predation and Competition in Antitrust: The Case of Nonfungible Goods*, 87 COLUM. L. REV. 1625, n. 113 (1987)**: “The complete identity of these two practices suggests that there should be many authors proposing tests for predatory product innovation, since there are so many with predatory pricing tests.”

## 1. *Presentation of Existing Classifications*

Part of the North American doctrine argues that innovation is predatory when R&D costs exceeded the expected gains.<sup>10</sup> It has been proved, however, that this theory is insufficient.<sup>11</sup> Another part of the doctrine has thus started to work on the development of different classifications allowing to apprehend predatory innovation practices (a).<sup>12</sup> They contribute to the creation of a better dichotomy (b).

### *a. Explicit and Implicit Classifications*

#### Number 1: Depending on the Type of Modification

Several authors<sup>13</sup> have distinguished three kinds of predatory innovations, based on the type of changes made on the products:

- The first encompasses all modifications aiming to eliminate a similar product: this type of predatory innovation involves the modification of a product in order to convince the consumer that the quality of the competitor's product is inferior.<sup>14</sup> The modification is expressly intended to eliminate an identified product;
- The second covers the changes tailored to eliminate compatible products: this type of predatory innovation implies a product modification aiming to restrict or eliminate competition by improving the product. This strategy seeks to compete by enhancing the product qualities;
- The third embraces all modifications made on the product components: this type of predatory innovation aims to modify a product in a way to remove competing products interoperability.<sup>15</sup>

---

<sup>10</sup> On the subject, see **Herbert Hovenkamp, Mark D. Janis, Mark A Lemley, Christopher R Leslie & Michael A Carrier, *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property Law* (3rd ed. Wolters Kluwer Law & Business, 2016).**

<sup>11</sup> The main reason for this deficiency is that such an investment *only* is anti-competitive if competitors have to make a similar investment in order to be competitive. A company's over-investment may simply result from the mismanagement of its resources, without, however, having breached antitrust law.

For a full range of arguments against this theory, *id.*

<sup>12</sup> Let's mention that several of these classifications do have some similarities. They are, however, reproduced in their entirety in order to preserve each of them logic.

<sup>13</sup> Including **Ross D. Petty, *Antitrust and Innovation: Are Product Modifications Ever Predatory*, 22 SUFFOLK U. L. REV. 997 (1988)**, see also **Mariateres Maggiolino, *Intellectual Property and Antitrust: A Comparative Economic Analysis of U.S. and EU Law*, 117 & 188 (Edward Elgar Pub 2011).**

<sup>14</sup> **Ross D. Petty, *Antitrust and Innovation: Are Product Modifications Ever Predatory*, 22 SUFFOLK U. L. REV. 997, 1024 (1988).**

<sup>15</sup> See *id.* at 1026.

## Number 2: Depending on the Link Between the Strategy and the Technical Design

One European author has distinguished two categories of predatory innovation:

- Technical design changes: this first category includes all modifications in which the technical design of a product is affected. These strategies aim at eliminating compatibility with competing products, or at integrating an independent product into another one.<sup>16</sup> It may be made, for instance, by removing the compatibility of a file format with a competing operating system;
- Communication strategy: the second category includes all communication strategies by which the dominant company regularly announces the release of a new product – and/or fictional features – so to dissuade its competitors to enter the market.<sup>17</sup> The purpose of such a strategy is generally to raise the competitors' costs and/or to precipitate the market exit of the competing product. This type of predatory innovation has no direct link with the technical modification of a product.

## Number 3: Depending on the Type of Tying

Another classification distinguishes three types of predatory innovations, some of which are similar to the one of the first two categorizations:

- Change of an existing product: the dominant company seeks to modify its product in order to make it incompatible with those of its competitors;<sup>18</sup>
- Technical ties: the company integrates one of its products into another one.<sup>19</sup> This may be done, for instance, when a company chooses to integrate a photo-editing software into its operating system;
- Traditional ties: the company contractually ties a product to another one.<sup>20</sup>

---

<sup>16</sup> Carlos Acuna-Quiroga, *Predatory Innovation: A Step Beyond?*, 15 INT'L REV. OF L. COMPUTERS & TECHNOLOGY 7, 15 (2001): "The term technological tying is used to describe alterations to product design in order to render complementary products no longer compatible or unnecessary, either by denying means to interconnect or integrating former individual products."

<sup>17</sup> See *id.* at 25.

<sup>18</sup> Herbert Hovenkamp, Mark D. Janis, Mark A Lemley, Christopher R Leslie & Michael A Carrier, *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property Law* (3rd ed. Wolters Kluwer Law & Business, 2016).

<sup>19</sup> See *id.* at 5.

<sup>20</sup> *Id.*

## Number 4: Depending on Time Element

A final dichotomy seems to distinguish the different types of predatory innovation according to a temporal criterion.<sup>21</sup> It is thus necessary to distinguish:

- Pure predatory innovation: it involves the alteration of a product technical components in order to restrict competition. It may happen, for instance, when a company chooses to modify its connectors. The anti-competitive strategy is implemented once the product is put on the market and adopted by the dominant company's competitors.
- Predation due to timing: this type of predatory innovation occurs when the dominant company introduces a technical change without warning any of the firms selling compatible products. This predation also includes the untimely announcement of new products introduction so to discourage its competitors.

### *b. Criticism and Utility of These Classifications*

These typologies suffer from defects which tend to challenge their legitimacy. It may thus be noted that:

- The first suffers from including practices that are *not* predatory innovation. Indeed, when a dominant firm decides to add a frivolous functionality to one of its products – so to differentiate it from competing products –, it may be deceptive but it is not a matter of antitrust law. In any case, without ever altering the product or its functionality, such a practice does not belong to predatory innovation. This classification cannot, therefore, be taken in full.
- The second classification suffers from the same flaw. The so-called vaporware practices – the repeated announcement of a new product and/or unachievable improvements – is a strategy that is not directly related to the product technical design. The same goes for the strategy in which the dominant firm promise a lower price than the one actually practiced so to discourage its competitors to develop their own products. As a result, this typology does not allow to identify correctly the practices of predatory innovation.
- The third typology focuses on the concept of ties. Technical or technological tying does require to be re-qualified as predatory innovation, as we will demonstrate. As a consequence, related practices are part of the scope of our analysis. Traditional tying – made by contract, however, is not part of predatory innovation because the product features are not affected. This typology is then partially useful.

---

<sup>21</sup> This dichotomy can be deduced from the article written by **Daniel A. Crane**, *Legal Rules for Predatory Innovation*, **CONCURRENCES: COMPETITION L.J.** n°4, 2013, although the author does not explicitly address the temporal aspect as a central element.

- The fourth classification is highly constructive because it integrates a temporal element that any analysis dealing with predatory innovation should not disregard. We dispute, however, the fact that the second strategy – the one of predation due to timing – must be condemned. Dominant companies have no legal obligation to help their competitors, which is acknowledged in North American and European jurisprudence.<sup>22</sup> By imposing to communicate before the introduction of a product,<sup>23</sup> the incentive to innovate would necessarily be reduced.<sup>24</sup> This classification must then help the creation of a new typology without repeating its entirety.

In short, these different classifications, even though they are imperfect, are contributing to the creation of a new dichotomy specifically designed for high-tech markets.

## 2. Proposal for a New Dichotomy

An effective typology must concur to a straightforward identification of predatory innovation practices, without encompassing others. It must also make it easier for judges and companies to understand the legal outcomes of the legal concept by suggesting the economic justifications that any company may provide in the event of a legal dispute (**b.**).

We propose to distinguish the alteration of a platform and the modification of a product technical – whether it concerns software or hardware (**a.**).<sup>25</sup>

---

<sup>22</sup> See, however, the *Nespresso* ruling of the French Competition Authority.

<sup>23</sup> In favor of imposing such a duty, see **Mary L. Azcuenaga, Comm'r, Fed. Trade Comm'n, Panel Discussion on Technological Innovation, International Trade, and Competition Policy, (Dec. 1, 1997)**, <https://www.ftc.gov/public-statements/1997/12/panel-discussion-technological-innovation-international-trade-and> [<https://perma.cc/22SR-9Q7U>].

<sup>24</sup> The French Competition Authority imposed on Nespresso to send its competitor technical information about its new machine 18 weeks before they are marketed. This decision, whose interventionism is unequalled in the European area, is an illustration of that antitrust authorities and judges may be tempted to interfere in the management of companies, see **French Competition Authority, 4 September 2014, n° 14-D-09**.

See also **Thibault Schrepel, Nespresso s'engage : le droit de la concurrence l'emporte-t-il ? Pas vraiment !, REVUE CONCURRENTIALISTE (May 19, 2014)** <http://leconcurrentialiste.com/wp-content/uploads/2017/02/nespresso.pdf> [<https://perma.cc/5ZFZ-HM42>] (*text in French*).

<sup>25</sup> Software allows the execution of a specific task while platforms allow the management of a set of elements – in which software is included, each having a specific task.

In some rare cases, these two products can be confused, see what describe **David S. Evans, Andrei Hagiu & Richard Schmalensee, Invisible Engines: How Software Platforms Drive Innovation and Transform Industries, 12 (ed. MIT Press, 2006)**.

It is therefore necessary to consider which functions are the subject of predatory practices.

### *a. Our Proposal: Modification of a Platform or an Independent Product*

#### **Modification of the Platform**

The first type of predatory innovation concerns technological platforms<sup>26</sup>/interfaces<sup>27</sup>. We mean the term “*platform*”<sup>28</sup> in the sense of the digital environment allowing the management and/or the use of application services.<sup>29</sup> Windows operating system, for instance, is a technological interface on which many developers create compatible software, such as those performing video or photographic processing.

*From a theoretical perspective*, considering platforms modifications imply taking into account the two-sided nature of high-tech markets – also referred as dual markets<sup>30</sup> – which allow interconnecting at least two distinct operators. Google is a prime example. On the one hand, the company offers a “free” service to its users, and on the other, it charges advertisers for better visibility. The modification of a platform implies therefore to consider the effects on both markets,<sup>31</sup> which the doctrine rarely does adequately.<sup>32</sup>

<sup>26</sup> We use platforms on a daily basis, see **David S. Evans, Andrei Hagiu & Richard Schmalensee, *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*, 223 (MIT Press, 2006).**

Studies on the subject of the modification of platforms are very rare.

<sup>27</sup> On how to writing of platforms, see **OECD Policy Roundtables, *Two-Sided Markets*, DAF/COMP(2009)20, at 27:** “*Rather than each application developer writing the code for performing each task, the software platform producer incorporates code into the platform, and thereby avoids duplication costs. The functions of that code are made available to application developers through an application program interface.*”

<sup>28</sup> On the distinction between platform and application, see **Bruce Abramson, *Promoting Innovation in The Software Industry: A First Principles Approach to Intellectual Property Reform*, 8 B.U. J. SCI. & TECH. L. 75, 113.**

The distinction suffers from alleviations, especially when the applications serve as a “*quasi-platform*.” And yet, it remains absolutely crucial for any market analysis related to high-tech. See on the subject **Bruce Abramson, *Promoting Innovation in the Software Industry: A First Principles Approach to Intellectual Property Reform*, 8 B.U. J. SCI. & TECH. L. 75, 113.**

<sup>29</sup> This is also the meaning adopted by Judge Posner, stressing that platforms have no value in themselves. Compatible software and applications provide value, see **Richard A. Posner, *Antitrust in the New Economy*, 68 ANTITRUST L.J. 925, 928 (2001):** “*Networks are not valuable to the consumer in themselves; they are conduits for the services that the consumer values. This is one point at which vertical integration enters the new economy. An operating system is a platform for software applications, and so the writer of operating-system software may decide to write software applications to ride on it, in much the same way that AT&T manufactured the terminal equipment attached to its telephone lines.*”

It should be noted the existence of a doctrinal debate on how to define this concept, see **Alfonso Lamadrid, *Regulating Platforms? A Competition Law Perspective*, CHILLIN’ COMPETITION, (Nov. 24, 2015) <http://www.project-disco.org/competition/112415-regulating-platforms-a-competition-law-perspective> [<https://perma.cc/6ZLB-XSG7>].**

<sup>30</sup> **OECD Policy Roundtables, *Two-Sided Markets*, DAF/COMP(2009)20, at 23:** “*A two-sided platform helps the members of two distinct groups of customers to get together in a way that generates value for these customers and that these customers could not get as efficiently, or possibly at all, without the platform. The platform typically internalizes indirect network effects between the customer groups.*”

The OECD notes that this notion was first used by Professors Rochet and Tirole.

Lastly, **Marie-Anne Frison-Roche & Laurent Cytermann, *Economy of platforms: Regulating a dominant model?*, CONCURRENCES: COMPETITION L.J. n° 2-2015, Art. n° 72328.**

<sup>31</sup> Measuring these effects requires antitrust law to take into account the fact that goods or services are offered for free to users, see **Michal S. Gal & Daniel L. Rubinfeld, *The Hidden Costs of Free Goods: Implications for Antitrust Enforcement*, 80 ANTITRUST L.J. 521, 562 (2016).**

<sup>32</sup> **Frédéric Jenny, *L’application du droit de la concurrence aux innovations de rupture aux États-Unis et dans l’Union européenne* in *Innovation de rupture, droit et concurrence*, CONCURRENCES: COMPETITION L.J., 29 January 2016.**

Such markets generally involve high fixed costs and relatively low variable costs.<sup>33</sup> Jean Tirole also underlines the failure of Coase's theorem on the latter.<sup>34</sup> It indicates that anti-competitive strategies are numerous insofar as a company can weigh some of the anti-competitive effects on one side of the market – and not on the consumer – which gives them some impunity. The failure of Coase's theorem also tends to prove the multiplicity of anti-competitive practices, because when one side of the market is not quite satisfied, it may compensate for its harm by implementing such practices. Even though no empirical study – to the best of our knowledge – has ever confirmed this postulate of the failure of Coase's theorem on two-sided markets, the growing numbers of such practices lean toward the need to examine them more closely.

*From a practical perspective*, all strategies relating to the physical characteristics of a product are necessarily excluded from this category. Conversely, any changes made to operating systems, web or application servers, and finally web or software applications in the sense of multimedia libraries (on-line stores) and other digital workspaces are included.<sup>35</sup> We also incorporate some changes made on Internet browsers which, with the development of applications directly operable on them, can serve as a platform.<sup>36</sup>

In short, the strategy of the dominant firm is straightforward. It aims – not at altering the competitor's product directly – at preventing access and/or reducing the overall compatibility of a product with the rest of the platform.<sup>37</sup> This strategy may have two purposes: (i) preventing the product of a competing firm from being fully integrated within the dominant company's platform, or (ii) preventing the competing platform from interacting efficiently with that of the dominant

---

<sup>33</sup> Justus Haucap & Ulrich Heimeshoff, *Google, Facebook, Amazon, eBay- Is the Internet Driving Competition or Market Monopolization?*, 11 INT. ECON. ECON. POLICY. 49, 55 (2014): “In general, it can be observed that many twosided markets are characterized by a cost structure with a relatively high proportion of fixed costs and relatively low variable costs.”

<sup>34</sup> Jean-Charles Rochet & Jean Tirole, *Two-Sided Markets: A Progress Report*, 35 RJE 645, 652 (2006), recalling Coase's contribution and concluding that “the Coase theorem is a useful benchmark. In practice, though, various factors make it unlikely that the two parties will reach an efficient agreement from their perspective (where “efficiency” refers to their joint surplus, and not to social surplus.”

Two authors particularly pointed out that several definitions had been given to dual markets. One implies the exclusion of the Coase theorem by which exchanges between economic actors lead to an optimal allocation of resources when the property right is clearly defined and when there are no transaction costs. The other definition disregards this feature, see Dirk Auer & Nicolas Petit, *Two-Sided Markets and the Challenge of Turning Economic Theory into Antitrust Policy*, 60 ANTITRUST BULL. 426 (2015).

<sup>35</sup> Hanno F. Kaiser, *Are “Closed Systems” an Antitrust Problem?*, 7 COMP. POL'Y INT'L 91, 96 (2011).

For an up-to-date overview of all multimedia layers in 2006, see David S. Evans, Andrei Hagiu & Richard Schmalensee, *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*, 223 (MIT Press, 2006).

<sup>36</sup> See Michael L. Katz & William P. Rogerson, *The Applications Barrier to Entry and Its Implications for the Microsoft Remedies: Comment on Iansiti and Richards*, 75 ANTITRUST L.J. 723, 728 (2009).

On this point, one author analyzed the platforms developed on the basis of other platforms, see Daniel O'Connor, *Understanding Online Platform Competition: Common Misunderstandings in Competition and Regulation of Online Platforms* (CPI, 2016): “Netflix, for example, uses Amazon Web Services (AWS) as its cloud infrastructure.”

<sup>37</sup> One author notes that predatory innovation can, in fact, aim at creating a period during which no compatible product is available, see Richard S. Markovits, *An Ideal Antitrust Law Regime*, 64 TEX. L. REV. 251, 293 (1985).

On the inexorable tension between platforms and applications, see Philip J. Weiser, *Regulating Interoperability: Lessons from AT&T, Microsoft, and Beyond*, 76 ANTITRUST L. J. 271, 287 (2009).

company. This strategy thus targets two types of competition, *between* platforms and *within* the platform.<sup>38</sup>

### Modification of an Independent Product Technical Design

*From a theoretical perspective*, the second type of predatory innovation takes place when the dominant company alters the functioning of a system software, an application software,<sup>39</sup> an application,<sup>40</sup> a driver<sup>41</sup> or a physical product. Such a strategy aims at eliminating the compatibility of a product, at changing the way it operates or at adding a (frivolous) functionality to it so to affect competition between “*contributors*,” which includes software developers, content and service<sup>42</sup> providers as well as companies producing compatible hardware.<sup>43</sup>

*From a practical perspective*, the dominant company seeks to affect directly the product of its competitors.<sup>44</sup> It may be caused by (i) implementing modifications on a product technical aspects – in other words, by altering the coding and/or programming – or (ii) by modifying the external characteristic of a product – then revising the external design and physical functionalities. A modification of the internal *and* external technical characteristics<sup>45</sup> may occur at the same time, for instance, when a company miniaturizes its connectors.

#### *b. The Usefulness of the Suggested Dichotomy*

### In Terms of Available Information

The dichotomy we presented is much constructive because it makes possible to differentiate two distinct types of predatory innovation practices and thus to identify more easily the different strategies which are linked to it.

<sup>38</sup> Hanno F. Kaiser, *Are "Closed Systems" an Antitrust Problem?*, 7 COMP. POL'Y INT'L 91, 96 (2011).

<sup>39</sup> Software is “*that part of a computer system that consists of encoded information or computer instructions, in contrast to the physical hardware from which the system is built.*” See **Software**, WIKIPEDIA, <https://en.wikipedia.org/wiki/Software> [https://perma.cc/G3U2-Z72E] (last visited Feb. 23, 2017).

<sup>40</sup> Applications are used to perform a specific task.

<sup>41</sup> A driver is software that allows the use of computer hardware.

<sup>42</sup> Hanno F. Kaiser, *Are "Closed Systems" an Antitrust Problem?*, 7 COMP. POL'Y INT'L 91, 96 (2011).

See also Robert E. Bartkus, **Note, Innovation Competition Beyond Telex v. IBM**, 28 STAN. L. REV. 285, 296 (1976): “*A more likely means of deterring imitation by the use of design is for a manufacturer of both a principal product and its accessories periodically to redesign the connections, junctions, or plugs between products in order to force consumers to buy the accessories from the innovator during the period when competitors are redesigning their accessories to fit the altered principal product.*”

<sup>43</sup> It can be a charger or a device that physically interacts with another.

<sup>44</sup> The OECD notes that such strategies are intimately linked to network effects, see **OECD Policy Roundtables, Two-Sided Markets**, DAF/COMP(2009)20 at 34: “*One of the defining characteristics of a two-sided platform is the existence of indirect network effects across consumer groups. Indirect network effects between the two sides promote larger and fewer competing two-sided platforms. Platforms with more customers of each group are more valuable to the other group. More users make software platforms more valuable to developers, and more developers make software platforms more valuable to users.*”

<sup>45</sup> They are called *hardware*, which is “*is the collection of physical components that constitute a computer system.*” See **Computer Hardware**, WIKIPEDIA, [https://en.wikipedia.org/wiki/Computer\\_hardware](https://en.wikipedia.org/wiki/Computer_hardware) [https://perma.cc/4KTR-EN8K] (last visited Feb. 23, 2017).

This distinction between platform and independent product modification also makes it possible to integrate into the analysis the level of information available at the time of the practice implementation. The modification of a platform, which allows multiple software, tends to suggest that the dominant firm does not have a specific knowledge of all the anti-competitive effects created on compatible products when modifying its platform. Several millions of software and applications are indeed operable on the most popular platforms. It is not uncommon, therefore, that changes made on the latter have unintended consequences. Therefore, based on all information available to the company and on a temporal element, it should be presumed that platform modifications are anti-competitive because predicting their anti-competitive effects is often far too complex.

### In Terms of Effects on Competition

The modification of a platform, which has a potential effect on large numbers of companies which have developed compatible software or applications, tends to include both pro-competitive (for some competitors) and anti-competitive effects (for other competitors). The more open the platform is, the greater is the presumption that the company is not aware of all compatible products.<sup>46</sup>

The sanctioning of predatory innovation practices carried out on the platforms must then require a greater caution, the risk of type I errors<sup>47</sup> being higher. In other words, a platform modification is more likely not to be purely anti-competitive<sup>48</sup> than an independent product alteration. It is indeed easier to modify the technical components of an independent product in order to alter the functioning of a specific competing product. Most interactions between software – as well as between physical products – are easier to identify than those resulting from a platform.

Moreover, the interplay between different software or physical products is actually designed by the developer who has expressly foreseen the latter – by allowing, for instance, a physical or a digital connection *via* Bluetooth, Wi-Fi and other data transmission systems. It is thus easier for him to alter the competing products by modifying its compatibility. In short, changes made to the technical components of a product tend to facilitate the implementation of a purely anti-competitive strategy which, in fact, can be condemned without creating type I errors.

---

<sup>46</sup> It should be noted here that, as for software, a platform may be “proprietary” when its creator is the only one enjoying the right to distribute and modify it – such as the Apple and its App Store. It may be “free” when third parties can access the source code to study or adapt it, modify and redistribute it.

<sup>47</sup> As a reminder, type I errors, also called “false positive,” reflect the fact that a judge or a competition authority condemns an undertaking for having implemented one or more practices which, in reality, are not anti-competitive. For an analysis of the risk type I error with predatory innovation, see **Kevin Coates & Sophie Lawrance, *Predatory Innovation*, COMPETITION LAW INSIGHT, (Apr. 18, 2014)** <http://www.competitionlawinsight.com/competition-issues/abuse-of-dominance/predatory-innovation--1.htm> [https://perma.cc/JHW9-2ZYU].

<sup>48</sup> On the other hand, as Stephen Elop – then CEO of Nokia – pointed out, competition between companies is increasingly turning on platforms, see **Chris Ziegler, *Nokia CEO Stephen Elop Rallies Troops in Brutally Honest ‘Burning Platform’ Memo?*, ENGADGET, (Feb. 8, 2011)** <http://www.engadget.com/2011/02/08/nokia-ceo-stephen-elop-rallies-troops-in-brutally-honest-burnin> [https://perma.cc/AB92-VBN2].

It should be noted, however, that although the anti-competitive modification of a product technical components is more likely to be characterized in this situation than when it is made on a platform, courts must not neglect the importance of the latter because its anti-competitive effects bear on a greater number of third parties. In other words, our analysis interest on the subject is much more related to the detection of predatory innovation strategies rather than giving a free pass to a particular type of predatory innovation.

*This dichotomy is intended to allow judges to up-build reasoned decisions and to endow the parties writing clear-cut conclusions. It also makes it possible to clarify the debate on the issue, to provide a legal structure, and lastly, to facilitate the identification of which practices are – or not – part of predatory innovation.*

## ***B. The Different Implementations of Predatory Innovation***

Studying the practices that fall within the scope of predatory innovation requires being particularly cautious. The OECD underlines the difficulty of analyzing practices in high-tech markets,<sup>49</sup> a trend which our study confirms. While many practices seem to fall within the scope of predatory innovation, several of them should be excluded from it (1.). We then analyze the ones that should be considered by the courts or competition authority (2.).

### ***1. Practices That Fall Outside the Scope of Predatory Innovation***

The design of digital platforms (a.) cannot, in itself, be considered as being an anti-competitive strategy. The same goes for the integration of content within these platforms<sup>50</sup> which, although stigmatized by some as being anti-competitive, should not be sanctioned – at least not as predatory innovation (b.).

#### ***a. The Design of Digital Platforms***

### **The Different Types of Platforms**

The European Commission defines platforms as products using “*the Internet to allow interactions between at least two distinct but interdependent groups of users so as to create value for at least one of the groups; Certain platforms [being] considered to be intermediary service providers.*”<sup>51</sup> A company may decide to design an open, a free or a proprietary platform.

---

<sup>49</sup> OECD Policy Roundtables, *Two-Sided Markets*, DAF/COMP(2009)20 at 34: “Evaluating the impact on social welfare of policy measures in markets where two-sided platforms operate can be very challenging”.

<sup>50</sup> On the need not to presume the existence of an anti-competitive strategy when a dominant firm operate on a second market, see Patrick Rey, Paul Seabright & Jean Tirole, *The Activities of a Monopoly Firm in Adjacent Competitive Markets: Economic Consequences and Implications for Competition Policy*, unpublished manuscript 45 (2001).

<sup>51</sup> Definition from the questionnaire on platforms launched by the European Commission, see European Commission Press Release IP/15/5704, *Have Your Say on Geo-Blocking and the Role of Platforms in the Online Economy* (Sept. 24, 2015), [http://europa.eu/rapid/press-release\\_IP-15-5704\\_en.htm](http://europa.eu/rapid/press-release_IP-15-5704_en.htm) [https://perma.cc/7U89-HERK].

Platforms are said to be “*open*” in the presence of any communication, interconnection, exchange protocol or data format whose technical specifications are public and without restriction of access or implementation. An open platform is not necessarily *free*.

Platforms are “*free*” or “*open source*” when the license<sup>52</sup> guarantees the user the right to access the source code,<sup>53</sup> to be able to study its functioning, to adapt it, to redistribute it,<sup>54</sup> and lastly, to improve it.<sup>55</sup>

Lastly, platforms are “*closed*” or “*proprietary*” when they carry data in which specifications are not public and/or whose use is restricted by its owner.<sup>56</sup> Technical details are unknown or subject to a non-disclosure agreement. The development of compatible software is generally hampered by this type of platform which does not legally or technically allow to exercise – at the same time – the four software freedoms<sup>57</sup>: the execution of the software for any type of use, the access to its source code, the distribution of copies as well as the modification and thus the improvement of the source code. It should be noted, nonetheless, that some companies owning proprietary platforms allow access to a great number of information in order to help developers.<sup>58</sup>

In fact, the distinction between these three types of platforms is not always manifest.<sup>59</sup> Some of them are hybrids, which creates difficulties of appreciation for competition authorities as it is the

---

<sup>52</sup> See, for instance, the FOSS license: “*Today many social-production FOSS projects are funded, supported and governed, fully or partially, by commercial companies,*” Michal S. Gal, *Viral Open Source: Competition vs. Synergy*, 8 JCLE 469, 474 (2012).

<sup>53</sup> Similar to Facebook’s model that has a partial open source policy, see **Facebook Website**, <https://code.facebook.com/projects/> [<https://perma.cc/7ELW-L98B>]: “*At Facebook, we have always been strong advocates of open software. From our earliest days - when the site was built on PHP, MySQL and memcached - we’ve been privileged to stand on the shoulders of open source giants. Ever since, we’ve worked hard to contribute our own work back to the community, and help other companies - both small and large - learn from our experience of building web, mobile, big data, and infrastructure stacks at scale. Most of our projects are on GitHub, and we also actively contribute elsewhere, such as to the Hadoop projects, LLVM, GNU grep, and Mercurial, amongst many others.*”

<sup>54</sup> See, for instance, the GNU GPL license: “*GNU GPL is a free software license that allows the recipients of a computer program to study how a program works, modify it and redistribute copies of the modified program without punishment,*” see Elaine Chow, *Appeals Court Dismisses Open-Source Antitrust*, LAW360 (Nov. 10, 2006) <http://www.law360.com/articles/13357/appeals-court-dismisses-open-source-antitrust-case> [<https://perma.cc/GMD2-VFUK>].

<sup>55</sup> Definition given by the Open Source Initiative.

See also David S. Evans, Andrei Hagiu & Richard Schmalensee, *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*, 71 (MIT Press, 2006).

On the interest for companies to develop open source technology, see Josh Lerner, Parag A. Pathak & Jean Tirole, *The Dynamics of Open Source Contributors*, 96 AM. ECON. REV. 114 (2006).

<sup>56</sup> “*Proprietary software is computer software for which the software’s publisher or another person retains intellectual property rights—usually copyright of the source code, but sometimes patent rights.*” See **Proprietary Software**, WIKIPEDIA, [https://en.wikipedia.org/wiki/Proprietary\\_software](https://en.wikipedia.org/wiki/Proprietary_software) [<https://perma.cc/L5B7-SU5A>] (last visited Feb. 23, 2017).

<sup>57</sup> See Wendy Seltzer, *The Imperfect Is the Enemy of the Good: Anticircumvention Versus Open User Innovation*, 25 BERKELEY TECH. L.J. 909, 933 (2010), “*all four of these components are necessary to give users full autonomy in their software environment; to use and learn from the program and to modify it to suit their needs. They guard against lock-in to an uncooperative vendor or defunct system, and assure that users will be able to reuse their individual investments in the program.*”

<sup>58</sup> Other criteria can also be used to define an open source model. The modification of any of them may involve the implementation of an anti-competitive strategy, see Jérôme Gсталter, *Open Standards and Competition Law: An Overview*, CONCURRENCES: COMPETITION L.J., n° 1, 2010.

<sup>59</sup> This is the case for Microsoft, see Herbert Hovenkamp, Mark D. Janis, Mark A Lemley, Christopher R Leslie & Michael A. Carrier, *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property*

case for the European Commission in its Android investigating.<sup>60</sup> Moreover, the expression of “*open system*” is an oxymoron because each system, in fact, is differentiated from others by the perimeter covered by its technologies. Three authors<sup>61</sup> have thus represented the complexity of evaluating the nature of a platform:

Figure 1: Comparison of Openness by Role in Platform-Mediated Networks

	Linux	Windows	Macintosh	iPhone
<b>Demand-Side User</b> (End User)	Open	Open	Open	Open
<b>Supply-Side User</b> (Application Developer)	Open	Open	Open	Closed
<b>Platform Provider</b> (Hardware/OS Bundle)	Open	Open	Closed	Closed
<b>Platform Sponsor</b> (Design & IP Rights Owner)	Open	Closed	Closed	Closed

Moreover, the way in which the platform is organized is also helpful to help characterize its nature:

Figure 3: Models for Organizing Platforms

		Who Provides the Platform ( <i>Provider Role</i> )?	
		One Firm	Many Firms
Who Controls Platform Technology ( <i>Sponsor Role</i> )?	One Firm	<b>Proprietary</b> <ul style="list-style-type: none"> <li>• Macintosh</li> <li>• Playstation</li> <li>• Monster.com</li> <li>• Federal Express</li> </ul>	<b>Licensing</b> <ul style="list-style-type: none"> <li>• Palm OS</li> <li>• American Express-branded MBNA cards</li> <li>• Scientific-Atlanta set-tops</li> </ul>
	Many Firms	<b>Joint Venture</b> <ul style="list-style-type: none"> <li>• CareerBuilder (created by three newspaper groups)</li> <li>• Orbitz (created by several major airlines)</li> </ul>	<b>Shared</b> <ul style="list-style-type: none"> <li>• Linux</li> <li>• Visa</li> <li>• DVD</li> <li>• UPC barcode</li> </ul>

Thomas R. Eisenmann, Geoffrey Parker & Marshall Van Alstyne, *Opening Platforms: How, When and Why?*, in *Platforms, Markets and Innovation*, (Edward Elgar Publishing, 2008)

**Law** (3rd ed. Wolters Kluwer Law & Business, 2016). On the support of openness by the dominant companies on high-tech markets, see also Michael Chapin, Note, *Sharing the Interoperability Ball on the Software Patent Playground*, 14 B.U. J. SCI. & TECH. L. 220 (2008).

<sup>60</sup> The European Commission is challenging Google’s operating system hybrid nature, see **European Commission Press Release IP/16/1492, Antitrust: Commission Sends Statement of Objections to Google on Android operating system and applications Android, (April 20, 2016)**, [http://europa.eu/rapid/press-release\\_IP-16-1492\\_en.htm](http://europa.eu/rapid/press-release_IP-16-1492_en.htm) [https://perma.cc/BJ8E-LDEX]: “Android is an open-source system, meaning that it can be freely used and developed by anyone to create a modified mobile operating system (a so-called “Android fork”). However, if a manufacturer wishes to pre-install Google proprietary apps, including Google Play Store and Google Search, on any of its devices, Google requires it to enter into an “Anti-Fragmentation Agreement” that commits it not to sell devices running on Android forks.”

<sup>61</sup> Thomas R. Eisenmann, Geoffrey Parker & Marshall Van Alstyne, *Opening Platforms: How, When and Why?*, in *Platforms, Markets And Innovation* (ed. Edward Elgar Publishing, 2008).

Most of the North-American doctrine advocates the pro-competitive aspect of open platforms,<sup>62</sup> underlining that they allow a greater diversity of products.<sup>63</sup> This point of view would be hard to challenge, although different anti-competitive strategies may emerge – including fragmentation<sup>64</sup> – that can be used for anti-competitive purposes.<sup>65</sup> The doctrine is more divided as to evaluate whether closed systems are pro or anti-competitive by nature.<sup>66</sup>

In a distinguished article, Hanno F. Kaiser has raised the many competitive advantages created by closed platforms.<sup>67</sup> This article, which goes against part of the doctrine, features arguments which deserve to be considered.

Closed platform may, for instance, allow the **pro-competitive limitation of the number of users**. A company may indeed have an interest in limiting the presence of users on its platform. Social networks may want to limit the number of enrollees based on the population targeted, as a restaurant may want to control the number of its customers. The same logic applies to platforms which may want to limit the number of applications and software to reduce the search costs associated with identifying the best ones.<sup>68</sup> In addition, paying for a poor-quality software may discourage the purchase of another software on the same platform.<sup>69</sup>

---

<sup>62</sup> See Mark A. Lemley & David McGowan, *Could Java Change Everything? The Competitive Propriety of a Proprietary Standard*, 43 ANTITRUST 715 (1998). Nevertheless, open platforms seem less likely to be the subject of anti-competitive strategies, see Josh Baskin, Note, *Competitive Regulation of Mobile Software Systems: Promoting Innovation Through Reform of Antitrust and Patent Laws*, 64 HASTINGS L.J. 1727, 1738 (2013). See also Wendy Seltzer, *The Imperfect Is the Enemy of the Good: Anticircumvention Versus Open User Innovation*, 25 BERKELEY TECH. L.J. 909, 932 (2010).

One writer notes the two advantages of open source: social and utilitarian, see Michael J. Schallop, *The IPR Paradox: Leveraging Intellectual Property Rights to Encourage Interoperability in the Network Computing Age*, 28 AIPLA Q.J. 195, 241 (2000).

<sup>63</sup> Jonathan Rosenberg, one of Google's executives, also said: "At Google we believe that open systems win. They lead to more innovation, value, freedom of choice for consumers, and a vibrant, profitable, and competitive ecosystem for business," see Jonathan Rosenberg, *The Meaning of Open*, OFFICIAL GOOGLE BLOG (Dec. 21, 2009) <http://googleblog.blogspot.com/2009/12/meaning-of-open.html> [https://perma.cc/XGD9-KQ8Q].

<sup>64</sup> The term "fragmentation" refers to the fact that open source software is modified by an operator so that several versions of the software, potentially incompatible with each other, are in circulation. On the existence of anti-competitive strategies on open source systems, see Michal S. Gal, *Viral Open Source: Competition vs. Synergy*, 8 JCLE 469, 485 (2012). More generally, a company may want to help develop an open source system on a market A in order to deprive its competitors of monopoly profits so as to better compete with them in a market B.

<sup>65</sup> Predatory innovation strategies may take place on open platform, see Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889, 1963 (2002).

A dominant company may fragment a competing open source software in order to make it less efficient, for the benefit of its proprietary software.

<sup>66</sup> Hanno F. Kaiser, *Are "Closed Systems" an Antitrust Problem?*, 7 COMP. POL'Y INT'L 91, 93 (2011).

See also Jonathan Zittrain, *The Future of the Internet And How To Stop It*, ed. Yale University Press (2008).

For more, see Tim Wu, *How Apple's Closed Ways Could Land It Into Antitrust Trouble*, TECHCRUNCH, (Nov. 20, 2010) <http://techcrunch.com/2010/11/20/apple-antitrust/> [https://perma.cc/E36W-5UDA].

<sup>67</sup> Hanno F. Kaiser, *Are "Closed Systems" an Antitrust Problem?*, 7 COMP. POL'Y INT'L 91, 102 (2011).

<sup>68</sup> This is what two authors point out, see Nikos Smyrniotis & Franck Rebillard, *Entre coopération et concurrence : Les relations entre infomédiaires et éditeurs de contenus d'actualité*, CONCURRENCES: COMPETITION L.J. n° 3, 2011, 14.

<sup>69</sup> One author is also evoking the "lemon problem," see David S. Evans, *The Antitrust Analysis of Rules and Standards for Software Platforms*, COASE-SANDOR WORKING PAPER SERIES IN LAW AND ECONOMICS 14 (2014): "THE LEMONS PROBLEMS: "lemons problem" for software platforms. The classic story involves the collapse of the Atari game console business in the early 1980s. Atari used a game cartridge that was an open standard making it possible for third parties to write games. Consumers could not observe the quality of a game until they played it. The availability of reviews was much

Yet, the European Commission argued for an opposite view back in 2010 during the Microsoft and Yahoo merger, pointing out that in order to be successful, “*a search engine needed to attract the most users on both sides of the platform.*”<sup>70</sup> The idea of network effects, which is central to technological tying issues, stems from the idea that companies necessarily want to attract the greatest number of users. But the point deserves at least to be discussed in each individual case<sup>71</sup>. A company operating in high-tech markets, even in the search engines one, may not necessarily want to attract an infinite number of users on both sides of the platform.

Second, closed platforms may allow **ensuring their safety**. Limiting competition within the platform – so-called “*intra-platform*” competition – may indeed be justified for security reasons<sup>72</sup>. The Android’s mobile platform, known to be more open than Apple’s one, was the first to suffer a viral attack in March 2011. Google then admitted the presence of 58 malicious applications on its platform.<sup>73</sup> At that time, the Android system simply sent Google a signal to point out which applications were vulnerable and needed to be deleted, while Apple’s system provided an *a priori* security in which each proposed application was previously subjected to a security test before entering its on-line store. But as a matter of that, it is difficult to evaluate which model benefit consumers the most, both having the potential to increase consumer welfare, schematically, by encouraging the creation of many applications or by ensuring a more optimal security.

Lastly, limiting cross-platform competition can be justified by the need to create software – or applications – specifically designed to **ensure their efficiency** within the platform. The simultaneous development of applications for several platforms,<sup>74</sup> facilitated by the existence of technical intermediaries,<sup>75</sup> is not necessarily beneficial to the consumer in terms of how the final product will be designed.<sup>76</sup>

---

*more limited than it is today. A flood of low-quality games appeared and contributed to the rapid decline of this pioneering game company. The successful game console companies such as Sony (for its PlayStation) that followed Atari limited the ability of third parties to publish games for their platforms and imposed quality controls.”*

<sup>70</sup> **Eur. Comm'n Case No. COMP/M. 5727-Microsoft/Yahoo! (Feb. 18, 2010) (C 1077), at 48:** “[i]n order to be successful, a search engine operator will try to attract as many participants on both sides of the platform as possible.”

<sup>71</sup> For instance, some companies may want to provide a service that saves consumer various “research costs” by sorting upstream information. In such a case, increasing the number of users and available information is not an objective pursued. On the contrary, it is a matter of providing quality information by allowing access to certain users only.

<sup>72</sup> The safety objective in itself does not appear to be part of antitrust law objectives. This is, however, a matter for day-to-day management.

<sup>73</sup> **Jason Kincaid, Google Responds to Android Malware, Will Fix Infected Devices and ‘Remote Kill’ Malicious Apps, TECHCRUNCH, (Mar. 5, 2011) <https://techcrunch.com/2011/03/05/android-malware-rootkit-google-response/> [https://perma.cc/M4R7-TS4K]:** “58 malicious applications were uploaded to Android Market, and that they were downloaded onto around 260,000 devices.”

<sup>74</sup> **French Competition Authority & Competition and Markets Authority, The Economics of Open and Closed Systems, (Dec. 16, 2014) [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/387718/The\\_economics\\_of\\_open\\_and\\_closed\\_systems.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/387718/The_economics_of_open_and_closed_systems.pdf) [https://perma.cc/BJ8E-LDEX].**

<sup>75</sup> Technical intermediation is provided by middleware, which serves as a communication intermediary between several applications.

<sup>76</sup> **Michael L. Katz & Carl Shapiro, Systems Competition and Network Effects, 8 J. ECON. PERS. 93, 95 (1994), see also Joseph Farrell & Philip J. Weiser, Modularity, Vertical Integration, and Open Access Policies: Towards a Convergence of Antitrust and Regulation in the Internet Age, 17 HARV. J. LAW & TECH. 85, 99 (2013).**

In short, closed platforms should not be condemned *per se*,<sup>77</sup> nor can it be assumed that open platforms only produced pro-competitive effects. It is necessary to study all practices taking place on these platforms and not to condemn them as such – or even to postulate their anti-competitive effect.

### *b. Content Integration Within Platforms*

The integration of content – being understood as any information or software – is generally analyzed under the legal concept of tying.<sup>78</sup>

In the *Intel* case,<sup>79</sup> the company emphasized the need to distinguish technological ties from one product integration into another. The company argued that the former was achieved through the joint sale of two distinct products, while the latter resulted from the integration of one product.<sup>80</sup> In fact, the distinction between these two practices is not an easy one because technological tying can be achieved by integrating one product into another, for instance, by integrating an Internet browser into the source code of an operating system. Regardless of this distinction, it is necessary to analyze the pro or anti-competitive character of the strategies falling within that scope.

### **A Pro-Competitive Foreclosure Effect**

The integration<sup>81</sup> of software – or application – into a platform is sometimes described as being predatory.<sup>82</sup> This type of practice, illustrated by the European Microsoft case, is said to have the effect of **foreclosing** the competitors because the dominant company enjoy an essential facility with its platform.

Several authors<sup>83</sup> have stressed, however, that it may be in the company and consumers best interest to integrate a product into one another because it allows (i) saving labor for the user, (ii) generating

<sup>77</sup> Several authors underline that the closed nature of a network *cannot* be challenged, in particular, because of the presence of intellectual property rights which confer the right to maintain it, see **Herbert Hovenkamp, Mark D. Janis, Mark A Lemley, Christopher R Leslie & Michael A. Carrier, *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property Law* (3rd ed. Wolters Kluwer Law & Business, 2016).**

<sup>78</sup> See **OECD Policy Roundtables, *Two-Sided Markets*, DAF/COMP(2009)20, Contribution of the European Commission at 174:** “Tying can be a very effective mechanism through which a dominant firm in a related market can penetrate one side of the two-sided platform to gain an advantage in competition for the other side. Both *Rochet and Tirole* (2003) and *Choi* (2004), however, are tailored to analyze specific cases of the payment card and media software industries, respectively. It would be desirable to develop a unified and more general framework that can encompass a variety of two-sided platform situations.”

<sup>79</sup> **Case COMP/M.5984-Intel/McAfee, Comm'n Decision (Jan. 26, 2011).**

<sup>80</sup> **Case COMP/M.5984-Intel/McAfee, Comm'n Decision at 202 (Jan. 26, 2011):** “Lastly, according to Intel, there is an important distinction to be made between technical tying (which is making inseparable products that can equally function separately) and product integration (which is integrating products to improve their global performance). According to Intel, while it has never engaged in technological tying, it has integrated new functionalities into its microprocessors and chipsets, whereby bringing substantial improvements in terms of performance, functionality or reduction of costs for its customers.”

<sup>81</sup> One author notes the existence of two types of integration, those aimed at improving the product and those aimed at locking the consumer, see **Jonathan Jacobson, Scott Sher & Edward Holman, *Predatory Innovation: An Analysis of Allied Orthopedic v. Tyco in the Context of Section 2 Jurisprudence*, 23 LOY. CONSUMER L. REV. 1, 9 (2010).**

<sup>82</sup> **Hanno F. Kaiser, *Are "Closed Systems" an Antitrust Problem?*, 7 COMP. POL'Y INT'L 91, 97 (2011).**

<sup>83</sup> **Kevin M. Murphy, *Economic Perspectives on Software Design: PC Operating Systems and Platforms* in David S. Evans, *Microsoft, Antitrust and the New Economy: Selected Essays* (ed. Kluwer, 2002).**

economies of scale and (iii) anticipating the occurrence of technical problems.<sup>84</sup> Moreover, unlike the traditional foreclosure effect, **the integration of one software within a platform does not have the systemic effect of eliminating competitors.**<sup>85</sup> And even if an eviction does arise, it results ineluctably from a natural competition process by which the company holding the platform has won the approval of its users.

In fact, if the embedded software has poorer performances than a competing product, it is not established that the consumer would keep the first software available to him – just look at how many users actually use QuickTime on their Mac. Transfer costs almost never proved to be strong enough to lock a user into an inferior technology.<sup>86</sup> Platform owners must then be free to alter their platform, according to ownership principles. In short, the software integration within a platform is not – and should not be recognized as – anti-competitive *in itself*.<sup>87</sup>

### Illustration with the Microsoft Case

Microsoft's decision to integrate its Windows Media Player into its operating system cannot be labeled as anti-competitive *per se* as long as its users are free to download competing software.

In this case, Microsoft consumers actually benefited from a multimedia software without having to engage any cost. It undoubtedly had a pro-competitive advantage which should have prevented the sanctioning of the practice, whether or not network effects were otherwise created. In fact, all network effects potentially created as a result of this practice were annihilated as soon as Microsoft users decided to use an alternative software. Condemning such a practice is similar to condemn the holder of telecom infrastructure for offering a phone subscription service.

Vigilance remains however necessary. Courts must be cautious when the company owning the platform, in addition to deciding to integrate software, also implements other practices whose only effect is anti-competitive. In the Microsoft example, by eradicating the feature allowing to remove the Internet browser from the operating system, and by programming the system so to bug when certain browser-related files were deleted, the company certainly engaged its responsibility in terms of predatory innovation. This case then illustrates the need to distinguish different practices that may appear to be one only.

## 2. Practices Falling Within the Scope of Predatory Innovation

One author notes that the frequency of predatory innovation tends to be amplified when the interests of platform owners diverge from those of content developers.<sup>88</sup> The dichotomy we have

---

<sup>84</sup> See Patrick Rey, Paul Seabright & Jean Tirole, *The Activities of a Monopoly Firm in Adjacent Competitive Markets: Economic Consequences and Implications for Competition Policy*, unpublished manuscript (2001).

<sup>85</sup> It can be used for a subsequent increase in prices, what Jean Tirole stressed in one of its contributions to economic literature. Such an increase cannot, however, be sanctioned under predatory innovation as it intervenes in a second phase and on issues that are outside the definition of predatory innovation.

<sup>86</sup> See in general William H. Page & John E. Lopatka, *The Microsoft Case: Antitrust, High Technology, And Consumer Welfare*, ed. The University of Chicago Press (2007).

<sup>87</sup> This also implies that any sanctioning *by object* should be rejected.

<sup>88</sup> Philip J. Weiser, *Regulating Interoperability: Lessons from AT&T, Microsoft, and Beyond*, 76 ANTITRUST

introduced indicates two types of such strategies. Some involve a change of platform type, causing a competitive harm (a.). Others, also labeled as “*products redesign*,” imply the modification of a product in a way to remove compatibility (b.). Again, all practices of this kind are not to be condemned and it is therefore required to delimit their perimeter.

### *a. The Change of the Platform Type*

Changing the type of platforms<sup>89</sup> may create a window for implementing an anti-competitive strategy.<sup>90</sup> As a reminder, open platforms imply that all technical specifications are publicly available, without restriction of access or implementation. They also allow the development of compatible software by third parties. Conversely, closed platforms let their creators control the available content. The development of compatible software can thus be prevented.

We then propose to study all platforms alteration strategies whose effects can be pro and/or anti-competitive. In more details, the alteration of a closed platform into an open platform seems *a priori* to be pro-competitive,<sup>91</sup> but the transformation of an open platform into a closed one is more contentious, the effects of such strategies being composite.

## **From a Closed to an Open Platform**

### *Antitrust Issues*

A platform can be changed in two ways: from an open to a closed one, or *vice versa*. In the first case, the company may choose not to ensure any compatibility between its operating system and the software developed by third parties. In the second one, the company may decide to open its operating system so that third parties can offer compatible software on sale.

While the European and North American doctrine seems – at the moment – to bear little significance to the anti-competitive strategies which may be nested<sup>92</sup> in such transformation of the platform type, real problems may arise in terms of antitrust law.<sup>93</sup>

---

L. J. 271, 291 (2009).

<sup>89</sup> For an examination of all possible way to open or close a platform, see **Thomas R. Eisenmann, Geoffrey Parker & Marshall Van Alstyne, *Opening Platforms: How, When and Why?*** (ed. Edward Elgar Publishing, 2008).

<sup>90</sup> **Herbert Hovenkamp, Mark D. Janis, Mark A Lemley, Christopher R Leslie & Michael A Carrier, *IP and Antitrust: An Analysis of Antitrust Principles Applied to Intellectual Property Law*** (3rd ed. Wolters Kluwer Law & Business, 2016), at “*Altering Existing Interfaces.*”

<sup>91</sup> **Josh Baskin, Note, *Competitive Regulation of Mobile Software Systems: Promoting Innovation Through Reform of Antitrust and Patent Laws***, 64 HASTINGS L.J. 1727, 1738 (2013).

See also **Michal S. Gal, *Viral Open Source: Competition vs. Synergy***, 8 JCLE 469, 478 (2012).

<sup>92</sup> Some authors even argue that an open platform cannot feature *any* competitive risk, see **Giovanna Massarotto, *Open Source Paradigm: Beyond the Solution to the Software Patentability Debate***, 15 J. MARSHALL REV. INTELL. PROP. L. 647, 675 (2016).

<sup>93</sup> **Matt Asay, *Open Source as An Antitrust Strategy***, CNet.com (Nov. 2, 2009) <http://www.cnet.com/news/open-source-as-an-antitrust-strategy> [<https://perma.cc/BW3Q-A78V>].

Professors Katz & Shapiro<sup>94</sup> stressed that opening a platform could have the effect of harming competing platforms. The existence of network effects may imply a strong competition between closed systems. Opening a platform may then reduce the competitive pressure on the market. Moving a closed to an open platform seems, as a result, to be anti-competitive in certain cases, but it is necessary to have a closer look.

### *Different Strategies*

The opening of a platform may be total or partial. In the first case, a company may want to set off competitive damages at several levels.<sup>95</sup> Let's suppose that a company, named A, decides to entirely open its platform. Let's also assume that this platform was partially closed until then, meaning that the company A controlled which software was available on it. Let's suppose, now, that the platform is popular and that one of these opening direct effects is the drastic increase in the number of applications and software available on it.

Several consequences should be discerned. First, network effects will be ineluctably increased, to the detriment of competing platforms. Second, the opening of the platform may have the effect of reducing the company market shares, called B, which is selling compatible software. That company may suddenly face increased competition on its core market, forcing it to reduce its selling price. If B is also selling a competing operating system, the opening of the platform may then create a foreclosure effect<sup>96</sup> beneficial to A on its core market.

Meanwhile, in such a situation, consumer welfare will nevertheless be increased. The programming of more software – to the detriment of B – is a salutary competitive process that should not be condemned. Some of the effects created by this practice are thus pro-competitive, which is typically true when a company entirely open its platforms because the company is changing its business model to the benefit of certain consumers. As a result, **the total opening of a platform should not be considered as a violation of antitrust law.**

The case of a platform partial opening may be more problematic. Let's imagine that the dominant company chooses to move from a closed platform – in which it controls the content – to a semi-open platform – in which it reserves the right to accept third-party content, or to reject it. One understands here that the dominant company may want to accept the software/applications of small companies – in order to increase the overall utility of its platform – and to refuse the ones of the biggest companies which may compete with it in other markets. Consequently, if the company designs its platform so to create technical incompatibility for unjustified reasons with the products of these strong competitors, the partial opening of the platform **may** have an anti-competitive effect which should **be condemned under the label of predatory innovation.**

### **From an Open Platform to a Closed Platform**

<sup>94</sup> See Michael L. Katz & Carl Shapiro, *Technology Adoption in the Presence of Network Externalities*, 94 J. POL. ECON. 822 (1986). They note that the choice to create a closed platform is the fruit of hard thinking.

<sup>95</sup> See Michal S. Gal, *Viral Open Source: Competition vs. Synergy*, 8 JCLE 469, 475 (2012).

<sup>96</sup> A variant of this strategy has been described by Michal S. Gal in her article entitled *Viral Open Source: Competition vs. Synergy*, 8 JCLE 469, 485 (2012).

A company owning an open platform may decide to shift it into a closed system, whether it is for pro-competitive reasons or to lock the market.<sup>97</sup> The probability that anti-competitive effects will be created is, in fact, more serious than when the opposite change is made. Judges must then assess whether such a change is justified by an economic reason – other than the anti-competitive effects to eliminate competition.

### *Pro and Anti-Competitive Reasons Explaining Such a Change*

In the recent joint report of the French Competition Authority and the Competition and Markets Authority, six reasons lay out why a company might want to close its platform:

- *The first* is **to protect its core business**. A company operating in the market of software may use its experience as a springboard to ultimately compete with the dominant firm in the market of platforms.<sup>98</sup>
- *The second* is that the owner of a platform may want to **lock one of its faces** in order to strengthen his dominant position on the other. For instance, a company may want to close down its users' faces "by preventing them from transferring their data to another platform in order to increase its market power on the sellers" side. Also, a "wrapping" strategy may aim at reinforcing the company presence on as many sides as possible in order to encourage its users to use them all.
- *The third*, the company may wish to close its platform in order to **reduce competition** on the market of compatible products. The goal is here to eliminate competition from products that can be used independently of the system.
- *The fourth*, to the extent that the price on the platform is regulated – and remains below the one maximizing the profits of the dominant firm – while the price of components is not, the latter may want to close the components market in order to **realize additional profits**.
- *The fifth* is that software and application developers may ask for a license at the most competitive price from the platform owner, which may result in **monopoly profits loss**. Closing the platform may **resolve this problem**.

---

<sup>97</sup> French Competition Authority & Competition and Markets Authority, *The Economics of Open and Closed Systems*, (Dec. 16, 2014) [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/387718/The\\_economics\\_of\\_open\\_and\\_closed\\_systems.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/387718/The_economics_of_open_and_closed_systems.pdf) [https://perma.cc/BJ8E-LDEX].

See also Josh Baskin, Note, *Competitive Regulation of Mobile Software Systems: Promoting Innovation Through Reform of Antitrust and Patent Laws*, 64 HASTINGS L.J. 1727, 1737 (2013).

<sup>98</sup> French Competition Authority & Competition and Markets Authority, *The Economics of Open and Closed Systems*, (Dec. 16, 2014), at 25 [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/387718/The\\_economics\\_of\\_open\\_and\\_closed\\_systems.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/387718/The_economics_of_open_and_closed_systems.pdf) [https://perma.cc/BJ8E-LDEX].

- *The sixth* and last one is the **price discrimination** that the owner of the platform may wish to practice on its users depending on how they use its platform. A closed system is indeed required to be able to impose a higher price on the users who are using its platform the most.

These various anti-competitive reasons tend to explain why a platform owner might want to close its platform.<sup>99</sup> In these different cases, the company would be implementing a practice of predatory innovation and should be sanctioned in this respect.

But the transition from an open to a closed platform may also cause heavy losses to the company implementing it. Let's suppose that a company, named APL, decides to close its mobile operating system (called "iOC") to all third parties. All mobile applications developed by third parties would in fact become incompatible with the iOC. It goes without saying that it would be impossible for this company to recreate the million applications available on its platform before it was closed.

In this case, mending an open platform into a closed one would cause enormous damages that the company could certainly not offset over the long run. It is then essential for judges to take into consideration all of the reasons which may lead a company to make such a change, considering that if a company takes the risk of doing so, a valid economic reason may justify it. These reasons are in fact numerous. They can lie, for instance, in the need to increase security, or to allow a more fluid use of the platform, or even to control the content in order to avoid negative externalities.

### *The Effects of Such Mutation*

Moving from an open to a closed platform can affect all software and applications operable on it, but it can also affect other platforms. There are, in fact, different ways for a company to close its platform, which create different effects.

In the first hypothesis, the dominant firm may affect compatible software and applications by intentionally seeking, by technical means, to forbid its competitors to access it. But the platform closure may also result from the regular introduction of a product new versions creating indirect incompatibility with competing products. The report of the French Competition Authority and the Competition & Markets Authority finally underlines the possibility that the incompatibility may result from contractual arrangements.<sup>100</sup> It is the case when purchasing a mobile phone on which no plan can be concluded with third parties.

In the second hypothesis, closing the platform may affect other platforms whenever users of the third party's platform can no longer interact with those of the dominant company. The removal of

---

<sup>99</sup> Other authors have stressed that: "At the platform provider and sponsor levels, these decisions entail: 1) interoperating with established rival platforms; 2) licensing additional platform providers; or 3) broadening sponsorship. With respect to end users and complementors, decisions to open or close a mature platform involve: 1) backward compatibility with prior platform generations; 2) securing exclusive rights to certain complements; or 3) absorbing complements into the core platform," see **Thomas R. Eisenmann, Geoffrey Parker & Marshall Van Alstyne, *Opening Platforms: How, When and Why?*, in *Platforms, Markets And Innovation* (2008).**

<sup>100</sup> This practice is outside the scope of predatory innovation.

a competing platform portability may also cause anti-competitive damages. The closing of the platform can finally result from the incompatibility with another platform components.

Several examples corroborate how **numerous** are the ways to close a platform. Among the major cases dealing with predatory innovation is the *IBM* one in which the company had decided to change the type of interface between its computers and hard disks.<sup>101</sup> The *Berkey Photo v. Eastman Kodak and C.R. Bard v. M3 Systems* also exposes a similar strategy.<sup>102</sup> It should be noted, however, that to **the best of our knowledge, no European case falls under this type of predatory innovation**. And yet, some recent examples illustrate that such strategies are increasingly common, which proves that antitrust law suffers from not having the necessary tools:

- In 2010, Google blocked the automatic export of user data to another website, unless the information can flow back and forth. The company accused Facebook of not allowing the data export,<sup>103</sup> the reason why, apparently, it had decided to remove the portability in retaliation.<sup>104</sup>
- In 2012, Twitter limited the ability for its users to use multiple applications running on Twitter at the same time.<sup>105</sup> As a reminder, these applications allow the inclusion of additional features to the service proposed by Twitter. They can be activated for an unlimited period. It may happen, as a result, that the limitation of these applications number was aimed at preventing these apps that could become essential and compete with the initial functionalities proposed by Twitter.
- In 2012, Facebook prevented its users from sharing their Instagram photos – which it had just acquired – on Twitter.<sup>106</sup> As a reminder, Instagram is a social network allowing the sharing of photographs. Once a photo is published, the user can choose to share it on other social networks that are not specialized in photographs sharing. It seems that the rivalry between Twitter and Facebook in this market has led the latter to prevent the photos published on Instagram to be shared on Twitter.

---

<sup>101</sup> *Computer Prods. v. IBM Corp.*, 613 F.2d 727 (9th Cir. 1979): “all ultimately rejecting claims that IBM had violated antitrust law by changing the interfaces between its computers and external tape and disk drives.”

<sup>102</sup> These judgments did not directly concern high-tech markets.

<sup>103</sup> Alexei Oreskovic, *Google Bars Data from Facebook as Rivalry Heats Up*, REUTERS (Nov. 6, 2010) <http://www.reuters.com/article/2010/11/05/us-google-facebook-idUSTRE6A455420101105> [<http://perma.cc/C3ZF-RHQQ>].

<sup>104</sup> The term portability refers to the fact that data can be transferred from one website to another.

<sup>105</sup> Ryan Lawler, *Twitter Gives Devs 6 Months to Display Tweets Properly, Use New Authentication and Rate Limits*, TECHCRUNCH, (Aug. 16, 2012) <http://techcrunch.com/2012/08/16/twitter-gives-developers-6-months-to-properly-display-tweet-use-new-authentication-and-rate-limits/> [<http://perma.cc/8LX5-B4SF>].

<sup>106</sup> Leena Rao, *Instagram Photos Will No Longer Appear in Twitter Streams at All*, TECHCRUNCH, (Dec. 9, 2012) <https://techcrunch.com/2012/12/09/it-appears-that-instagram-photos-arent-showing-up-in-twitter-streams-at-all> [<http://perma.cc/8FJG-CKNC>]: “Last week, Facebook-owned Instagram decided to turn off support for Twitter Card functionality for its photos. Basically, you would no longer see the full images; rather, you’d see a cropped version.”

- In 2013, Facebook prevented all iPhone game developers from using other virtual currencies than its own.<sup>107</sup>
- In 2016, Instagram blocked an application called Being which allowed its content to be read without having to use Instagram.<sup>108</sup> Instagram intended to prevent its users from accessing its service through a third-party application that would allow accessing its content for obvious reasons linked to advertising revenues.

Each of these practices meets the criteria of predatory innovation. Nevertheless, a case-by-case analysis would have been necessary in order to assess whether or not a technical justification was provided, and thus, whether the company should have been convicted or not. Irrespective of the verdict that each of these cases may have received, it shows that many practices meet the criteria for predatory innovation.

### *b. Product Modification in a Way to (Partially) Remove Compatibilities*

#### **The Specificities Associated with This Type of Predatory Innovation**

Product interoperability is often described as the ability to (i) exchange information and (ii) to use this information.

The modification of software or application can fulfill similar objectives to those exposed to the change of platform type. Amending a product interoperability may affect a competitor in the same market – this would be the case if PCs were suddenly incompatible with Macs – or a competitor in a downstream market – for instance when audio speakers are suddenly incompatible with Macs.

There is, however, a specific characteristic of this type of predatory innovation: the potential changes in the product are less a matter of an overall philosophy than it is for the choice of an open or proprietary platform. Many companies justify their choice to offer an open platform because this encourages sharing and a “free” world in which the concept of computer ownership is forsaken to the benefit of the community which is free to develop various software. Such motivation is much less common regarding software development insofar as they are not intended to allow other applications to operate on it.

On the contrary, such a modification aims at changing the product functioning so that its interaction with other products is improved, or deteriorated in the case of a strictly anti-competitive practice. The possible economic justification for this type of predatory innovation is related to short-term efficiency.

---

<sup>107</sup> Ron Knox, *Facebook Fires Back at Monopoly Accuser*, GCR (Oct. 21, 2013) <http://globalcompetitionreview.com/article/1058126/facebook-fires-back-at-monopoly-accuser> [<https://perma.cc/LR9H-FGS7>].

<sup>108</sup> Sarah Perez, *Instagram Kills Newly Launched ‘Being’ App, Which Saw 50K Downloads Its First Week*, TECHCRUNCH, (Mar. 9, 2016) <https://techcrunch.com/2016/03/09/instagram-kills-newly-launched-being-app-which-saw-50k-downloads-its-first-week> [<https://perma.cc/57SS-TT3G>].

This type of predatory innovation also involves cheaper and faster changes than for mutations in the platform type. Removing wireless technology from an electronic device may result, for instance, from the elimination of a computer code single line, unlike the change of platform type that requires an entirely new global setting. In other words, this type of practice implies a lower cost than altering a platform, which tends to escalate its implementations.

### The Various Concretizations of Such Strategy

Such a predatory innovation may be aimed at *removing* a product functionality. It could be, for instance, when the files generated by one product cannot be executed on another product.

Predatory innovation can also result from *changing* the functionality of a product. For instance, a phone manufacturer may decide to change the wireless communication mode of its devices, from Bluetooth to Wi-Fi. The wireless communication functionality is maintained, but the latter is modified so that the compatibility with a competitor product is eliminated. As a result, wireless speakers using Bluetooth technology will be incompatible for a dominant company benefit which will be able to increase the sales of its own Wi-Fi speakers.

Such a strategy of predatory innovation can finally result from *adding* a frivolous functionality. A company may decide to allow its users to execute an abandoned programming language. It can, as a result, require all compatible products to allow the execution of that language, because some compatible software may then require its use. In such a situation, compatibility with competing products could be eliminated on the grounds that they do not allow the execution of an additional programming language which is obsolete.

These different strategies of removing, changing or adding functionalities have recent manifestations. The *Intel*<sup>109</sup> and *iPod iTunes litigation*<sup>110</sup> cases are two examples illustrating the antitrust issue of removing direct interoperability with competitor products.<sup>111</sup> And many other examples also testify the regular occurrence of such practices. Without assessing if these practices are indeed anti-competitive or not, here is a brief list of some:

- Apple has changed its iPhone and MacBook connectors several times in the last few years. A new charger for its iPhones, called Lightning, was introduced with the iPhone 5<sup>112</sup>. A new charger for its computers, called USB-C, was also introduced in 2015. To assess whether these changes are anti-competitive or not, it should be discussed if Apple can demonstrate an actual economic justification.

<sup>109</sup> Fed. Trade Comm'n, *Statement in the Matter of Intel Corporation*, FTC Docket No. 9341 (Dec. 16, 2009).

<sup>110</sup> *The Apple iPod iTunes Anti-Trust Litigation*, case number 5:2005cv00037.

<sup>111</sup> Some less well-known cases concern the same issues *see In re Keurig Green Mountain Single-Serve Coffee Antitrust Litigation*, 24 F.Supp.3d 1361 (J.P.M.L. 2014) in which the dispute was defined as such.

*See also Arminak & Associates, Inc. v. Saint-Gobain Calmar, Inc.*, 789 F.Supp.2d 1201 (C.D. Cal. 2011).

<sup>112</sup> A rapid analysis seems to indicate that this new charger created important gains for the consumer, *see Darrell Etherington, Apple's New Lightning Connector: What It Does and Doesn't Change*, TECHCRUNCH, (Sept. 12, 2012) <https://techcrunch.com/2012/09/12/apples-new-lightning-connector-what-it-does-and-doesnt-change> [<https://perma.cc/VQ9Q-6PRE>].

- In 2016, when updating the iPhone operating system (IOS 9.2.1), the company decided to remove the main button functionality of its iPhones when a third party had fixed the screen. The latter then displayed “*Error 53*,” and its use was impossible. In response to the bad press, the company finally decided to restore its functionality during an update of its operating system.<sup>113</sup>
- In September 2016, Apple announced the removal of the “*Jack*” plug (audio connection) on its iPhones. This universal format allows the compatibility of all headphones with any electronic devices aiming at playing music – telephones, audio and multimedia players, computers.<sup>114</sup>

These various illustrations do not, in any way, assume the illegality of these practices, but they illustrate how common changes in technical design are, whether external or internal.

---

<sup>113</sup> Matthew Panzarino, *Apple Apologizes and Updates iOS To Restore iPhones Disabled by Error 53*, TECHCRUNCH (Feb. 18, 2016) [https://techcrunch.com/2016/02/18/apple-apologizes-and-updates-ios-to-restore-iphones-disabled-by-error-53/?ncid=rss&cps=gravity\\_1730\\_6272015608800873000](https://techcrunch.com/2016/02/18/apple-apologizes-and-updates-ios-to-restore-iphones-disabled-by-error-53/?ncid=rss&cps=gravity_1730_6272015608800873000) [https://perma.cc/A2TL-HBVT].

<sup>114</sup> See Haje Jan Kamps, *Apple kills headphone jack (1878 – 2016). RIP.*, TECHCRUNCH, (Sept. 7, 2016) <https://techcrunch.com/2016/09/07/headphone-jack-rip> [https://perma.cc/3GXW-RE9H].

A petition signed by more than 300,000 people denounced this practice, Antony Leather, *Could Apple Cripple iPhone 7 Sales by Removing the Headphone Jack?*, FORBES, (Jan. 8, 2016) <http://www.forbes.com/sites/antonyleather/2016/01/08/could-apple-cripple-iphone-7-sales-by-removing-the-headphone-jack/#7dc8f679a77c> [https://perma.cc/22VL-8V5X].

Again, this paper does not affirm that this practice constitutes a predatory innovation.

*Predatory innovation practices, besides the fact that they are numerous, may also take many forms that this study profiled into two main categories. The utility of our dichotomy is to allow the identification of these practices which form evolve along with technological evolution. To seek listing every single one of them would be unsuccessful, the reason why it is of particular importance to have the tools allowing to identify them when necessary.*

*The damages caused by these many practices on the economy must lead antitrust law specialists to develop a legal regime that addresses predatory innovation. The need to recognize a specific regime for these practices seems to be indisputable in so far as current antitrust rules does not make it possible to apprehend these practices without creating judicial errors. The implementation of a specific regime will thus increase the firms' legal certainty while ensuring judges the ability to impose clear-cut decisions. As a consequence, such regime does not lead to more sanctions, but on the contrary, it leads to better sanctions. It will strengthen "free markets" – by allowing companies to compete on non-frivolous innovations – which is the only driving force not impeding with innovation - in opposition to interventionism.*

### III. THE NEED FOR AN AUTONOMOUS LEGAL REGIME FOR PREDATORY INNOVATION

Legal categories are tools that reflect the objectives assigned to antitrust law,<sup>115</sup> the reason why the legal qualification given to predatory innovation is essential.

Numerous legal decisions, from the United States and Europe, apprehend predatory innovation practices using the legal rules of tying. More precisely, the concept of “*technological tying*” is often used to analyze certain practices of predatory innovation (A.). Yet, these two notions must be separated from one another. The need to create a coherent legal regime implies the creation of some legal rules dedicated to predatory innovation. It would eventually imply to remove the teetering concept of “*technological tying*” (B.) so to create, instead, a more coherent legal regime that could be understood by business leaders without creating Type I or II errors.<sup>116</sup>

In short, we intend to answer two questions: is “*technological tying*” recognized by courts as being independent from “*general tying*”? We demonstrate the great deal of ambiguity surrounding this issue. But then, even by supposing that a legal regime should be created for technological tying, will it be good enough to address entirely the question of predatory innovation? The answer we give is straightforward: no, it is not.

#### A. *Parallels and Disparity Between Predatory Innovation and Technological Tying*

Professor Bosco underlined how difficult it is to redefine the legal framework, asking, “*is there ever a real change for legal concepts?*” and adding, “*will they be tomorrow fundamentally different from what they are today? We have reasons to believe they will never be really new nor truly remodeled to the point of showing a new face.*”<sup>117</sup> And yet, it is essential to reconsider several of them, including “*technological tying.*” We will

---

<sup>115</sup> Nicholas Economides & Ioannis Lianos, *The Elusive Antitrust Standard on Bundling in Europe and in the United States in the Aftermath of the Microsoft Cases*, 76 ANTITRUST L.J. 483, 486 (2009): “Antitrust categories are not just analytical tools. They also reflect the objectives and underlying premises of the entire competition law system.”

On the issue of which objectives to assign antitrust law, some authors argue that it should pursue economic efficiency, it is called *consumer welfare*, while some others, defending *total welfare*, assign the protection of many more parameters, such as employment..., see Charles M. Gastle & Susan Boughs, *Microsoft III and the Metes and Bounds of Software Design and Technological Tying Doctrine*, 6 VA. J.L. & TECH. 1, n. 113 (2001).

Olivier Fréget has pointed out that antitrust law has a social purpose, not an economic one, see Olivier Fréget, *La Concurrence, une idée toujours neuve en Europe et en France* (ed. Odile Jacob, 2016). The author talks about “*economism*” to denounce the fact that economic theories take an increasingly important place in antitrust law, to the detriment of legal concepts.

Daniel A. Crane, in its article entitled *Antitrust and Wealth Inequality*, 101 CORNELL L. REV 1171, 1228 (2016), underlines that “*antitrust law is generally ill positioned to describe how the pie is allocated or to prescribe how it should be allocated,*” to which we subscribe.

<sup>116</sup> As a reminder, type I errors, also called “*false positive,*” reflect the fact that a judge or a competition authority condemns an undertaking for having implemented one or more practices which, in reality, are not anti-competitive. Conversely, type II errors, also called “*false negative,*” reflect the fact that a judge or a competition authority decides not to condemn a company which has implemented one or more practices which are in fact anti-competitive.

<sup>117</sup> David Bosco, *Regards sur la Modernisation de l'Abus de Position Dominante*, LPA, 2008, n°133 (text in French)

then recall its perimeter (1.) in order to identify the similarities with the notion of predatory innovation (2.).

### 1. *The Legal Regime of (Technological) Tying*

In both the United States and Europe, the concept of tying has been the subject of numerous<sup>118</sup> case law (a.). The same statement cannot be made regarding the concept of “*technological tying*” – also said “*technical tying*” (b.).

#### a. *The General Rules of Tying*

#### Its Mechanism

**Tying practices consists of offering two distinct products (the tying and the tied products) in one batch.**<sup>119</sup> Ties may result from the specific characteristics of the product (a pair of shoes is usually sold with laces), a contractual bond (the obligation to contract an insurance when buying a car) or an integrated design (as may be the integration of an Internet browser within an operating system).<sup>120</sup>

While it is widely acknowledged that ties are usually pro-competitive,<sup>121</sup> the Courts have stressed over the years that tying may also produce anti-competitive effects.<sup>122</sup> In fact, North American judges were the first<sup>123</sup> to use a 4-step test to determine whether a tie should be condemned or not. They analyzed:

<sup>118</sup> Tying is the trendiest of article 102 TFEU / Section 2 Sherman Act anti-competitive categories, see our study realized on **Google Books Ngram**, <https://perma.cc/WV7V-6YBU>.

<sup>119</sup> The Article 102 TFEU condemns the fact of “*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*”. Tying practices are included.

<sup>120</sup> **J. Gregory Sidak**, *Do Free Mobile Apps Harm Consumers?*, 52 **SAN DIEGO L. REV.** 619, 623 (2015).

<sup>121</sup> For a great reason to do so, see **Sarita Frattaroli**, Note, *Dodging the Bullet Again: Microsoft III’s Reformulation of the Foremost Technological Tying Doctrine*, 90 **B.U. L. REV.** 1909, 1913 (2010).

Two authors note that tying can also harm the company which is implementing it by removing its ability to exploit the benefit of a superior compatible product. On the subject, see **Richard J. Gilbert & Michael H. Riordan**, *Product improvement and Technological Tying in a Winner-Take-All Market*, unpublished manuscript 4 (2003).

<sup>122</sup> **Alan Devlin & Michael Jacobs**, *Anticompetitive Innovation and the Quality of Invention*, 27 **BERKELEY TECH. L.J.** 1, n. 82 (2012).

Intra-brand ties are one of the last practices condemned in theory under a *per se* rule, although the legal regime applied by the courts is actually more complex, see **Hanno F. Kaiser**, *Are “Closed Systems” an Antitrust Problem?*, 7 **COMP. POL’Y INT’L** 91, n. 38 (2011).

**Jean Tirole**, *The Analysis of Tying Cases: A Primer*, 1 **COMPETITION POL. INT’L** 1, 1 (2005).

However, in its Guidance on its enforcement priorities in applying Article 82 of the EC Treaty, the Commission distinguishes between ties and predation strategies.

More generally, on the interest companies have to implement anti-competitive strategies, see the **R. Preston McAfee, John McMillan, Michael D. Whinston**, *Multiproduct Monopoly, Commodity Bundling, and Correlation of Values*, 104 **Q.J. ECON.** 371, 372 (1989).

The anti-competitive interest of these practices is reinforced by studies on consumer behavior when confronted to pure tying practices, see **Stefan Stremersch and Gerard J. Tellis**, *Strategic Bundling of Products and Prices: A New Synthesis for Marketing*, 66 **J. MARKETING** 55 (2002).

<sup>123</sup> *Jefferson Parish Hospital District No. 2 v. Hyde*, 466 U.S. 2 (1984).

- 1) the existence of a dominant position in the tying product market;
- 2) the existence of a separate product for which exists an autonomous demand;
- 3) the impossibility of buying one of the two products without buying the other;
- 4) the existence of a competition distortion in the tied product market.<sup>124</sup>

This four-step test, as defined by North American jurisprudence, frames the notion of tying which cannot be used to appreciate practices outside of its own scope.

European courts apply the same test to which they add a fifth independent criterion: the lack of objective justification<sup>125</sup>. The Guidance on its enforcement priorities in applying Article 82 of the EC Treaty (now 102 TFEU) admits the possibility of proving any “*efficiency gains*”,<sup>126</sup> even though the first four criteria are filed.

### Evaluation in North American and European Antitrust Law

In the United States, allegations of ties<sup>127</sup> are generally dealt with under Section 1 of the Sherman Act<sup>128</sup>, but several cases illustrate the possibility of using the Sherman Act Section 2.<sup>129</sup> It should be underlined, however, that ties are then subjected to a distinct regime from the one of “*monopolization*.”<sup>130</sup>

In Europe, the concept of tying is subjected to different rules<sup>131</sup> from the ones applied to other predatory practices – which Jean Tirole criticizes<sup>132</sup> – although both ties and predation practices are generally addressed under Article 102 TFEU.<sup>133</sup> The European judges have condemned indirect

<sup>124</sup> These criteria were set out in *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2 (1984).

<sup>125</sup> See Case T.30.89 Hilti [1991] ECR 11-1439 at 96 and Case T.83.91 Tetra Pak [1994] ECR 11-755 at 136.

<sup>126</sup> 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 O.J. (C 45) 62 (Feb. 24, 2009) [http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52009XC0224\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52009XC0224(01)&from=EN) [https://perma.cc/6P3L-T3M9].

<sup>127</sup> See *id.* at 7.

<sup>128</sup> See *id.* at 6.

<sup>129</sup> In fact, several texts could be invoked, as noticed by Kate Wallace in her article entitled *The Wonderful World of Tying*, The American Bar Association Young Lawyers Division (2012).

<sup>130</sup> This is not the case in Europe, see Maria Lilla Montagnani, *Predatory and Exclusionary Innovation: Which Legal Standard for Software Integration in the Context of the Competition versus Intellectual Property Rights Clash?*, 37 INT'L REV. INTELL. PROP. & COMPETITION L. 304, 325 (2006).

<sup>131</sup> The European Commission, in its 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 O.J. (C 45) (Feb. 24, 2009), [http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52009XC0224\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52009XC0224(01)&from=EN) [https://perma.cc/N9D5-ADLS], distinguishes several types of monopolization: exclusive agreements, tied and bundled sales, refusal of supply and margin compression.

<sup>132</sup> Defending the idea that the distinction between tying and predation is unjustified, see Jean Tirole, *The Analysis of Tying Cases: A Primer*, 1 COMPETITION POL. INT'L 1, 1 (2005).

<sup>133</sup> Maria Lilla Montagnani, *Predatory and Exclusionary Innovation: Which Legal Standard for Software Integration in the Context of the Competition versus Intellectual Property Rights Clash?*, 37 INT'L REV. INTELL. PROP. & COMPETITION L. 304, 310 (2006).

ties in *Hoffmann-Laroché* for the first time.<sup>134</sup> It also results from several cases, including *Hilti* and *Tetra Pak II*,<sup>135</sup> that evaluation of tying practices is subjected to the rule of reason<sup>136</sup>, even though they are condemned “by object”<sup>137</sup> and without evaluating their “effects.” In short, the rules of general tying are straightforward and result from years of jurisprudence. Such is not the case for technological tying.

### *b. Technological Tying: Different from General Tying?*

#### **Its Mechanism**

Technological tying involves the simultaneous purchase of two products<sup>138</sup> forced by technical design, or, in other words, the modification of a product so that another one will be tied to it.<sup>139</sup>

This type of strategy occurs when a dominant company designs its product in a way to impose the buying of another product on its consumer. This can be done by refusing to set up means for interconnection or by integrating products into one of the dominant companies.<sup>140</sup> It may also happen when the external design of a product creates incompatibility with competing products, for instance, when a dominant firm modifies its software to force its consumers to purchase its software.

---

However, it should be noted that ties may also be addressed under Article 101 of the TFEU, *see* **Commission Regulation 330/2010 of 20 April 2010 on the application of Article 101(3) of the Treaty on the Functioning of the European Union to categories of vertical agreements and concerted practices [2010] OJ L102/1.**

The Guidance on the enforcement priorities in applying Article 82 EC to foreclosure practices by dominant undertakings also deal with the issue of tying.

<sup>134</sup> ECJ Case 85/76 *Hoffmann-La Roche v. Commission* [1979] ECR 461.

<sup>135</sup> For instance, Case C-53.92. *Hilti*, [1994] ECR I-667 and Case C-333.94 P, *Tetra Pak v. Commission*, [1996] ECR I-5951, both cited in the *Microsoft* case before European courts.

However, few decisions condemning this practice are available, *see* Benjamin Edelman, *Does Google Leverage Market Power Through Tying and Bundling?*, 11 (2) JNL. OF COMPETITION LAW & ECONOMICS 365, 368 (2015): “the European Commission has issued few decisions concerning tying. Best known is its 2004 finding that Microsoft abused its dominant position in the PC OS market by tying Windows with Windows Media Player (WMP);” *see also* Pablo Ibáñez Colomo, *Beyond the ‘More Economics-Based Approach’: A Legal Perspective on Article 102 TFEU Case Law*, à paraître in 53 C.M.L. REV. 4, 12 (2016).

<sup>136</sup> *See* David Bosco, *Abus de position dominante de Microsoft : le Tribunal de première instance confirme... et Microsoft se soumet !*, C.C.C. n° 11, 2007, comm. 279 (text in French), dealing with *Microsoft Corp. v. Commission*, Case T-201/04, [2007] 5 C.M.L.R. 11.

<sup>137</sup> Pablo Ibáñez Colomo, *Beyond the ‘More Economics-Based Approach’: A Legal Perspective on Article 102 TFEU Case Law*, à paraître in 53 C.M.L. REV. 4, 12 (2016).

<sup>138</sup> This may be the case, for instance, when a company decides to change the connections of its devices in order to force the consumer to buy its product, such as the charger, the video cable... *see* Yanos Bakos & Erik Brynjolfsson, *Bundling Information Goods: Pricing, Profits, and Efficiency*, 45 MGMT. SCI. 1613, 1638 (1999).

<sup>139</sup> Sarita Frattaroli, Note, *Dodging the Bullet Again: Microsoft III’s Reformulation of the Foremost Technological Tying Doctrine*, 90 B.U. L. REV. 1909, 1916 (2010): “Technological tying is a functional form of tying where a firm designs a product so that it functions only when used with a complementary product.”

<sup>140</sup> Carlos Acuna-Quiroga, *Predatory Innovation: A Step Beyond?*, 15 INT’L REV. OF L. COMPUTERS & TECHNOLOGY 7, 15 (2001): “The term technological tying is used to describe alterations to product design in order to render complementary products no longer compatible or unnecessary, either by denying means to interconnect or integrating former individual products. As a result of these variations a firm may leverage its dominance in one market to the market for complementary products or to the new market created for the new, integrated product.”

## On the Need to Define a Separate Legal Regime for General Tying

In the United States, the concept of technological tying was used throughout the proceeding against Microsoft.<sup>141</sup> Part of the doctrine argued that the regime for general tie could have been applied to technological matters, thus denying the need to create a separate regime for technological ties.<sup>142</sup> Another part of the doctrine, supported by several courts including the one dealing with this case, argued for the necessity to apply a distinct regime for these two types of ties.<sup>143</sup>

In Europe, the treaties<sup>144</sup> and jurisprudence do not address this issue,<sup>145</sup> which tends to confirm the absence of an independent regime for technological tying.<sup>146</sup> The European Commission only makes a reference to it in its Guidance on its enforcement priorities in applying Article 82 of the EC Treaty (now 102 TFEU), stressing that:

*“The risk of anti-competitive foreclosure is expected to be greater where the dominant undertaking makes its tying or bundling strategy a lasting one, for example through technical tying which is costly to reverse. Technical tying also reduces the opportunities for resale of individual components.”<sup>147</sup>*

<sup>141</sup> It can be found in the following cases:

- *U.S. v. Microsoft Corp*, 147 F.3d 935 (D.D.C. 1998)
- *U.S. v. Microsoft Corp*, Not Reported in F.Supp.2d (D.D.C. 1998)
- *Caldera Inc. v. Microsoft Corp.*, 72 F. Supp. 2d 1295 (Utah Dist. Ct. 1999)
- *U.S. v. Microsoft Corp*, Not Reported in F.Supp.2d (D.D.C. 1999)
- *U.S. v. Microsoft Corp*, 87 F.Supp.2d 30 (D.D.C. 2000)

<sup>142</sup> Einer Elhauge, *Tying, Bundled Discounts, and the Death of the Single Monopoly Profit Theory*, 123 HARV. L. REV. 397, 447 (2009).

<sup>143</sup> See in particular the decision *Response of Carolina, Inc. v. Leasco Response, Inc.*, 537 F.2d 1307 (5th Cir. 1976). Also, David S. Evans & Richard Schmalensee, *Some Economic Aspects of Antitrust Analysis in Dynamically Competitive Industries*, 2 *Innovation Pol'y & Econ.* 1, 37 (2002).

As a reminder, the Jefferson Parish hold that a *per se* test should be applied, pointing out that “[i]t is 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,” *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2 (1984).

The author notes, however, that the first judgment in the Microsoft case applied the Jefferson Parish test. This test was subsequently dismissed by the D.C. Circuit, see David A. Heiner, *Assessing Tying Claims in the Context of Software Integration: A Suggested Framework for Applying the Rule of Reason Analysis*, 72 U. CHI. L. REV. 123, 143 (2005).

<sup>144</sup> Article 102 (2) (d) of the TFEU refers to contractual ties only.

<sup>145</sup> See, under the direction of Jacques Bourgeois & Denis Waelbroeck, *Ten Years of Effects-Based Approach in EU Competition Law*, ed Bruylant (2012).

Microsoft argued that acknowledging technological ties prevented the application of the classic rules in terms of refusal to sell, evoking *Joined cases C-241/91P and C-242/91P, RTE and ITP v. Commission*, 11995] E.C.R. 1-743, also *IMS*, Case C-418/01, [2004] E.C.R. 1-5039 and *Microsoft Corp. v. Commission*, Case T-201/04, [2007] 5 C.M.L.R. 11.

<sup>146</sup> See Christopher D. David & James F. Ponsoldt, *A Comparison Between U.S. and E.U. Antitrust Treatment of Tying Claims Against Microsoft: When Should the Bundling of Computer Software be Permitted?*, 27 *NW. J. INT'L L. & BUS.* 448 (2007).

See also Roberto Pardolesi & Andrea Renda, *The European Commission's Case Against Microsoft: Kill Bill?*, 27 *WORLD COMPETITION & ECON. REV.* 513, 577 (2004).

<sup>147</sup> *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 O.J. (C 45) 53 (Feb. 24, 2009).

To the best of our knowledge, the *Microsoft* case of the General Court of the European Union is the only one expressly referring to the terms of “*technological tying*”<sup>148</sup> which was put forward by the company.<sup>149</sup> One analyst also noted that this case had been an opportunity for the European Commission to distinguish between traditional ties and technological ones. By acknowledging the possibility for the user to download other media players *via* the Internet, the Commission indeed emphasized the need to analyze the practical *effects* on competition rather than to recognize illegality “*by object*” as it does for general ties.<sup>150</sup>

Microsoft challenged this analysis on the ground that the Commission didn’t prove the anti-competitive nature of its practice. Its arguments had been rejected by the General Court without further clarification, leaving doubt as to the existence of a truly separate legal regime for technological ties. Because the Guidance of 2009 did not enshrine this distinction, its existence is very doubtful.

In fact, legal uncertainty appears to have been deliberately maintained around the need to recognize a separate regime for technological tying. But the aim of our study is not to determine whether such a regime should be acknowledged, because it would not, in any case, gives the courts and antitrust authorities the opportunity to apprehend the whole range of practices, as we will demonstrate.

## 2. *The Apparent Parallelism Between Technological Ties and Predatory Innovation*

The concepts of predatory innovation and technological tying sometimes involve similar mechanisms *f(a.)* which may explain why the label of technological ties actually ousted the one of predatory innovation. Some authors then asked for these two notions to be addressed under the same legal regime (*b.*), which should not be done.

### *a. The Visible Similarity of the Two Mechanisms*

#### **The Sanctioning of Internal Practices**

The two practices, technological tying and predatory innovation, intend to punish a company implementing *internal* practice which aims at restricting competition. In general, antitrust law is more stringent with restrictive practices directly imposed on *third parties*. The notions of technological ties and predatory innovation thus complement the legal arsenal available to judges and authorities in this field.<sup>151</sup>

---

[http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52009XC0224\(01\)&from=EN](http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52009XC0224(01)&from=EN)  
[<https://perma.cc/JL9N-EQSF>].

<sup>148</sup> **Microsoft Corp. v. Commission**, Case T-201/04, [2007] 5 C.M.L.R. 11.

<sup>149</sup> It should also be noted that the European Commission refers to the term of “*technical tie*,” see **Case COMP/M.5984-Intel/McAfee**, Comm'n Decision at 200 (Jan. 26, 2011).

<sup>150</sup> Eirik Østerud, *Identifying Exclusionary Abuses by Dominant Undertakings under EU Competition Law: The Spectrum of Tests* (Kluwer Law International, 2010).

<sup>151</sup> Dennis W. Carlton, *The Relevance for Antitrust Policy of Theoretical and Empirical Advances in Industrial Organization*, 12 GEO. MASON L. REV. 47, 87 (2003).

## Two Strategies That Can Be Confused

The texts and jurisprudence clearly distinguish predation strategies from ties. However, it is worth noting these two infringements have a common nature. An author also underlines that most cases generally involved simultaneously some predation, ties, price discrimination and discounting.

The concepts of technological ties and predatory innovation may cover identical practices insofar as they may induce the purchase of two distinct products,<sup>152</sup> the reason why judges sometimes have difficulties distinguishing between the two practices. In the *Nespresso* case, for instance, the French Competition Authority characterized the practices as being illegal tying because the company created incompatibility with competing capsules.<sup>153</sup> And yet, the legal uncertainty created by the legal regime of tying – in addition to being imprecise – does not permit the strategy technical nature to be taken into account, which could have been circumvented by applying the legal regime of predatory innovation.

### *b. Regarding the Plea for Single Legal Regime*

#### The Defense of a Single Legal Regime

Part of the doctrine in the United States argued that ties and predatory practices should be analyzed under the same legal regime – ties – on the basis that analyzing predatory innovation in itself would be too complex.<sup>154</sup> This partial renunciation does not appear to be aimed at improving antitrust law over the long run. What is well conceived is clearly said and the absence of distinction between these two notions would generate lots of confusion<sup>155</sup> which would lead to ineffective rulings.<sup>156</sup>

#### The Concept of Technological Tying Is a Charade

---

<sup>152</sup> Kara E. Harchuck, Note, *Microsoft IV: The Dangers to Innovation Posed by the Irresponsible Application of a Rule of Reason Analysis to Product Design Claims*, 97 NW. U. L. REV. 395, 414 (2002).

<sup>153</sup> Thibault Schrepel, *Nespresso s'engage : le droit de la concurrence l'emporte-t-il ? Pas vraiment !*, REVUE CONCURRENTIALISTE, (May 19, 2014), <http://leconcurrentialiste.com/wp-content/uploads/2017/02/nespresso.pdf> [https://perma.cc/5ZFZ-HM42] (*text in French*), stressing that it is not certain that regulating products interoperability encourages companies to invest on the long term, contrary to what was put forward by the French Competition Authority in its *Nespresso* decision.

<sup>154</sup> Kara E. Harchuck, Note, *Microsoft IV: The Dangers to Innovation Posed by the Irresponsible Application of a Rule of Reason Analysis to Product Design Claims*, 97 NW. U. L. REV. 395, 399 (2002).

<sup>155</sup> As it was the case in *Microsoft II*, see *id.* at 409.

<sup>156</sup> See *id.* at 437.

Some jurisdictions have recognized the need to distinguish between the two concepts.<sup>157</sup> Moreover, as pointed out by part of the North American doctrine,<sup>158</sup> the risk of type I error<sup>159</sup> is higher for predatory innovation than it is for tying. It is then appropriate to assign it a proper legal regime so to prevent such legal errors occurrence.<sup>160</sup>

Meanwhile, the concept of tying is used as a charade. As Professors Waller and Sag have stressed, “the court tortured existing tying doctrine to carve out a new rule of reason test for software tying in order to not second guess what are separate and new products being unlawfully tied together by a dominant firm and what are new features of existing products that would serve the needs of consumers and promote innovation.”<sup>161</sup> The legal regime for predatory innovation requires addressing these issues. This means, in other words, that the concept of tying should not be used as a magical trick to hide the inadequate analysis in the field.

*Technological tying and predatory innovation have some similar roots, which led some scholars to argue that the first one should take over predatory innovation. But even assuming that a truly distinct legal regime does exist for “technological tying,” the fact of the matter is that predatory innovation is broader and generally more complex. An independent legal regime should then be created instead of the one for “technological tying.”*

### ***B. The Absolute Necessity to Acknowledge an Independent Legal Regime***

The concept of technological tying is unsuitable to address every predatory innovation practices (1.). Predatory innovation must thus be acknowledged as an autonomous legal concept (2.).

#### ***1. The Impossible Applicability of the Legal Regime for Technological Tying***

---

<sup>157</sup> See *id.* at 408.

<sup>158</sup> See also U.S. DEP'T OF JUSTICE, COMPETITION AND MONOPOLY. SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT 88 (2008): “The Department agrees with courts and panelists urging restraint in the area of product design and believes that great caution should be exercised before condemning a technological tie under the antitrust laws. Firms make many decisions about the design of their products, the vast majority of which—including those made by monopolists—raise no competitive concern.”

<sup>159</sup> As a reminder, type I errors, also called “false positive,” reflect the fact that a judge or a competition authority condemns an undertaking for having implemented one or more practices which, in reality, are not anti-competitive. For an analysis of the risk type I error with predatory innovation.

<sup>160</sup> U.S. DEP'T OF JUSTICE, COMPETITION AND MONOPOLY. SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT 87 (2008).

One author notes that DOJ “forgot” to mention predatory innovation in its report on Section 2, see Ronald W. Davis, *The Antitrust Divisions Report on Section 2: Firm Foundation for Enforcement or a Bridge to Nowhere?*, 23 ANTITRUST 42, 47 (2008).

<sup>161</sup> Spencer Weber Waller & Matthew Sag, *Promoting Innovation*, 100 IOWA L. REV. 2223, 2233 (2015): “the court tortured existing tying doctrine to carve out a new rule of reason test for software tying in order to not second guess what are separate and new products being unlawfully tied together by a dominant firm and what are new features of existing products that would serve the needs of consumers and promote innovation.”

The regime for technological tying is ambiguous, which has the effect of decreasing the level of legal uncertainty (a.). It suffers, besides, from many shortcomings that disqualify it from assessing all predatory innovation practices (b.).

### *a. The Inaccuracy of the Legal Regime for Technological Tying*

#### **The Lack of Coordination between European and North American law**

The current regime for general tying is not the same in Europe and the United States.<sup>162</sup> Although European judges have taken over the entire four-step test set out in North American jurisprudence, they do so by adding a fifth step regarding the practice justification. The North American test, for its part, does not seem to consider the potential efficiencies that a tie is likely to create. Also, as previously indicated, US law distinguishes the ties from other practices of “*monopolization*,”<sup>163</sup> which is not the case for European rules, thus creating an increased level of complexity.

#### **The Occasional Recognition of a Separate Legal Regime for Technological Tying**

As we demonstrated, the recognition of a specific regime for technological tying is not constant. North American judges, for instance, have refused to recognize the existence of such a specificity in several cases<sup>164</sup> on the ground that competitors remained free to create compatible products with one of the dominant firms. And in any case, even when judges have admitted the existence of technological ties, they have not created a legal regime clearly identified.<sup>165</sup>

The fact is that dominant high-tech companies often have a global strategy. Software, for instance, is distributed in a single version across multiple continents. Applying a different methodology to the same practice, depending on where the trial is brought, decreases legal certainty by a lot. The importance of defining a stable and established methodology for all practices must lead to the creation of an independent legal regime.

### *b. Insufficiencies in the Legal Regime for Tying*

---

<sup>162</sup> Within the North American system, an author underlines that “*in the US, maintaining the distinction causes different standards to be used to assess predatory behaviors: monopolization, on the one hand, and tying, on the other hand (the latter also giving rise to wide debate on the tying being per se legal or illegal or needing a rule of reason approach). Whereas, in the EU, the abuse offense test is common for both contractual and technological tie-ins. This distinction, likely to lead to different outcomes depending on the system under which a tying is assessed,*” see **Maria Lilla Montagnani, Predatory and Exclusionary Innovation: Which Legal Standard for Software Integration in the Context of the Competition versus Intellectual Property Rights Clash?**, 37 INT’L REV. INTELL. PROP. & COMPETITION L. 304, 332 (2006).

<sup>163</sup> More generally, on the difference between “*monopolization*” and predatory practices, see **Frank H. Easterbrook, Predatory Strategies and Counterstrategies**, 48 U. CHI. L. REV. 263, 268 (1981).

<sup>164</sup> **Suzanne Van Arsdale & Cody Venzk, Predatory Innovation in Software Markets**, 29 HARV. J.L. & TECH. 243, 253 (2015).

<sup>165</sup> **David S. Evans & Richard Schmalensee, Some Economic Aspects of Antitrust Analysis in Dynamically Competitive Industries**, 2 I.P.E. 1, 31 (2002).

The legal concept of tied selling is still blurry as underlined by **Gönenç Gürkaynak, Derya Durlu & Margaret Hagan, Antitrust on the Internet: A Comparative Assessment of Competition Law Enforcement in the Internet Realm**, 14 BUS. L. INT’L 51, 80 (2013).

## A Legal Arsenal Overly Discordant

The concept of tying does not cover the same practices in Europe and the United States. The subordination of one product purchase to another, by technical or contractual measures, is sanctioned in both continents. But the European conception of tying also intersects<sup>166</sup> with what the North American jurisprudence sanctions under the label of pure bundling – in which several distinct products are sold together in fixed and unchangeable proportions.<sup>167</sup>

Once again, legal certainty is necessarily reduced because of this terminological confusion, which is also reflected in the regime applicable to these different practices. The Department of Justice and the Federal Trade Commission note that “*courts have sometimes analyzed bundling under the rubric of tying,*”<sup>168</sup> but this is not typically the case.<sup>169</sup> In *Jefferson Parish*,<sup>170</sup> the Supreme Court ruled that selling identical products together – which is pure bundling – is not anti-competitive and that tying can be condemned if they create a foreclosure effect. According to this jurisprudence, the two notions benefit from a different legal regime, which is not how European law analyze them.

It goes without saying that this different interpretation of general tying necessarily leads to a divergence regarding technological tying.

## Tying is an Incomplete Legal Arsenal

In the *Microsoft IV*<sup>171</sup> case, the concepts of tying and predatory innovation were mentioned simultaneously. Yet, in North American law, predatory practices are a form of “*monopolization,*”<sup>172</sup> while ties generally fall under Section 1 of the Sherman Act. The analysis in terms of market shares is necessarily divergent.

There again, this case law illustrates the incapacity to apprehend accurately predatory innovation when applying tying rules. Section 1 of the Sherman Act does not require an analysis of the market power, and without establishing such power, it is nearly impossible to prove the company interest in implementing predatory innovation strategies.

## 2. *Predatory Innovation as an Autonomous Legal Regime*

---

<sup>166</sup> Two markets are thus affected insofar as the company seeks to create a leverage effect.

<sup>167</sup> On this situation, one market is affected only.

<sup>168</sup> U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION, 106 (2007): “*courts have sometimes analyzed bundling under the rubric of tying.*”

<sup>169</sup> U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST ENFORCEMENT AND INTELLECTUAL PROPERTY RIGHTS: PROMOTING INNOVATION AND COMPETITION, 106 (2007).

<sup>170</sup> *Jefferson Parish Hospital Dist. No. 2 v. Hyde*, 466 U.S. 2 (1984).

The Jefferson Parish judgment refers to *Times-Picayune Pub. Co. v. United States*, 345 U.S. 594 (1953) on the separate regime for pure bundling.

<sup>171</sup> *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001) (en banc) (Microsoft IV).

<sup>172</sup> Kara E. Harchuck, Note, *Microsoft IV: The Dangers to Innovation Posed by the Irresponsible Application of a Rule of Reason Analysis to Product Design Claims*, 97 NW. U. L. REV. 395, 398 (2002).

The legal regime for technological tying – by supposing that a clear definition of it actually exists – is inappropriate for two reasons. First, it does not cover all the practices of predatory innovation and may thus lead to the creation of type II errors. Second, even for the practices of predatory innovation that it actually covers, it participates in the creation of type I errors (a.). Conversely, the creation of a legal regime for predatory innovation will make it possible to assess such practices without risking the creation of judicial errors which are particularly harmful in high-tech markets (b.).

### *a. The Singularity of Predatory Innovation*

Clarifying the legal regime for technological tying will not resolve the equation. As we have said, technological ties and predatory innovation cover some of the same practices – whenever the company is imposing the purchase of two distinct products – but predatory innovation also covers other practices. For that reason, it is essential to create an autonomous regime for the notion of predatory innovation so that all practices will be looked from the same angle. Four reasons corroborate this need.

#### **No Need for Two Distinct Products**

Unlike tying, predatory innovation practices do not require the existence of two distinct products. When assessing whether a practice constitutes a tie, it could be incredibly difficult to determine if products A and B are truly distinct from one another.<sup>173</sup> And without proving that they actually are,<sup>174</sup> no sanction may be imposed, even if an anti-competitive practice required so.<sup>175</sup>

Two authors also underlined<sup>176</sup> that the product separability test is more stringent in the United States than it is in Europe. A company may prove in the US that two products are more efficient when sold together and as a result, they will be considered as being a single product.<sup>177</sup> Such a mechanism is not allowed in Europe.

In fact, the necessity to prove the existence of two distinct products may lead the judges not to condemn some practices that should be. **Some anti-competitive practices may indeed be subject to antitrust law under predatory innovation while they are not under tying: these are all strategies in which the dominant firm modifies an existing product without thereby imposing – directly – the purchase of a separate product.**

<sup>173</sup> See J. Gregory Sidak, *An Antitrust Rule for Software Integration*, 18 YALE J. ON REG. 1, 26 (2001). The author argues for the need to demonstrate the existence of two distinct products should be abandoned, considering the task too difficult and too far removed from the central issue of the damage to the consumer.

<sup>174</sup> On the difficulty to determine what two distinct products are, see Jean Tirole, *The Analysis of Tying Cases: A Primer*, 1 COMPETITION POL. INT'L 1, 8 (2005).

<sup>175</sup> Jon Polenberg, Comment, *ifosorciM and croMiftos: Why High-Technology Antitrust Inquiry Is Backwards and Inside-Out*, 57 U. MIAMI L. REV. 1275, 1293 (2003).

<sup>176</sup> See Timothy Cowen & Stephen Dnes, *Antitrust in the EU Digital Markets: A Case Study*, CPI (July 2016) <https://www.competitionpolicyinternational.com/antitrust-in-the-eu-digital-markets-a-case-study> [https://perma.cc/9TRF-U4ND].

<sup>177</sup> *United States v. Microsoft Corp.*, 147 F3d 935, 64 (DC Cir. 1998).

For instance, as we demonstrated, moving from an open into a closed platform<sup>178</sup> – or removing functionality within a product – raises issues that tying actually ignores. The dominant firm's goal may be to eliminate a competitor on market B – for compatible products – without offering any alternative, so to reduce the competitor profits and thus the competitive pressure it may exercise on market A.

Moreover, the concept of technological tying is unfit to cover all of the predatory innovation practices in which – for technical reason – two distinct products have become one. This is a *de facto* incoherence of technological ties.

### Assessing the Anti-Competitive Effects in Related Markets

A practice can be condemned under the legal regime of technological tying *only if* it creates an anti-competitive effect on the tying product market (market A), or the market of the tied product (market B). Three authors have noted that tying strategies generally aim at strengthening the monopoly power of the dominant firm in market A, which is where its core activity is.<sup>179</sup>

Yet, deleting the compatibility between two products may have no meaningful anti-competitive effect in these two markets. It is the case when, despite the compatibility removal, some other competing products are available to the consumer which welfare is maintained at the same level. The anti-competitive effect may then occur in another market – the market C, an issue which tying cannot address.

Let's assume that the dominant firm on market A actually intend to create an anti-competitive effect by reducing a competing firm's profits on market B to compete with it on the market C. In fact, the legal regime of tying is too limited to examine a practice that may be aimed at affecting the entire ecosystem because it only allows analyzing the anti-competitive effects on the markets for the tying product (market A) and the tied product (market B).

For instance, a dominant company in the production of a mobile phone (market A) may be willing to reduce the profits of a competing company in the market for digital tablet (market B) so to reduce its investing capacities and then benefit from a competitive advantage on the market for digital watches (market C). Only the creation of a legal regime for predatory innovation will allow grasping this strategy.

### The Indifference to Monopoly Power and Leverage Effect

---

<sup>178</sup> A closed platform implies that its creator maintains a more or less absolute control over the content which is available. He can control which software is distributed and compatible with its platform.

<sup>179</sup> See Patrick Rey, Paul Seabright & Jean Tirole, *The Activities of a Monopoly Firm in Adjacent Competitive Markets: Economic Consequences and Implications for Competition Policy*, unpublished manuscript (2001).

Two authors underline, however, that technological ties may also aim to extend a dominant position on another market, see Dennis W. Carlton & Michael Waldman, *The Strategic Use of Tying to Preserve and Create Market Power in Evolving Industries*, 33 RAND J. ECON. 194 (2002).

It is not clear, based on case law, if a tie implemented with the aim of obtaining a competitive advantage – and not a monopoly power – on the tied market can be sanctioned under Section 2 of the Sherman Act.<sup>180</sup> Conversely, practices of predatory innovation may be aimed at eliminating only one competitor, without eliminating all of them. For instance, the interoperability of a product can be removed with one competing product only, a practice which would be covered by predatory innovation, unlike tying.

Also, it should be noted that the north-American concept of tying simply apprehends the practices which create a leverage effect<sup>181</sup> and concept of ties then only authorizes to deal with the strategies implying two distinct markets. Predatory innovation practices *may* create such a leverage effect<sup>182</sup>, but it is not typically the case.<sup>183</sup> The mechanism of tying is thus too limited by nature, which is why judges had to contort it to be able to apply it to practices falling under another mechanism.

### Conclusion on the Unworkable Adaptability of Ties

Part of the doctrine proposes to distinguish between cases involving only one practice of technological tying and those involving another predatory strategy.<sup>184</sup> They suggest using the rule of reason for technological ties and a *per se* legality rule for predation.<sup>185</sup> While this distinction may seem satisfactory, it does not actually address any of the issues raised about the ineptitude of the technological tie to predatory innovation. As we demonstrated, the mechanism of technological ties is unsuitable for dealing with all of the issues created by this type of practice. The distinction between technological tie, on the one hand, and “pure” predatory innovation practices on the other is not only unsatisfactory, but it may also cause damages the economy by reducing the incentive to invest.

#### *b. An Autonomous Legal Regime Designed to Incentivize Investments*

---

<sup>180</sup> **Getting the Deal Through, *Abuse of Dominance*, United States, 2016.**

We can assume that this legal regime follows from the influence of the Chicago school which advocated the impossibility of using monopoly power in a market in order to obtain another monopoly on a second market without sacrificing its profits, *see* on the subject **Robert H. Bork & J. Gregory Sidak, *What Does the Chicago School Teach About Internet Search and the Antitrust Treatment of Google?*, 8 J. COMPETITION L. & ECON. 663 (2012).**

<sup>181</sup> The term “leverage” is used to describe the strategy by which a firm uses its dominant position on a market A with the goal to extend it in on other markets, *see* **John M. Newman, *Anticompetitive Product Design in the New Economy*, 39 FLA. ST. U. L. REV. 681, 683 (2012).**

<sup>182</sup> *See id.*, at 683.

<sup>183</sup> A strategy of predatory innovation may aim at eliminating competitors in one market by removing compatibility between software.

<sup>184</sup> **Kara E. Harchuck, Note, *Microsoft IV: The Dangers to Innovation Posed by the Irresponsible Application of a Rule of Reason Analysis to Product Design Claims*, 97 NW. U. L. REV. 395, 416 (2002).**

<sup>185</sup> *See id.* at 437.

## The Specificities of “Innovation” as a Predatory Strategy

Predatory innovation could lead to three different foreclosure effects: (i) foreclosure on the main market, (ii) foreclosure on related markets and/or (iii) vertical exclusion. Only the first two are generally analyzed, but vertical exclusion is a real issue regarding predatory innovation. Integrating software within a platform, for instance, is perceived by some authors as a predatory strategy that must be condemned.

The analysis of predatory innovation is also complex as it relies only in part on the traditional patterns of predation practices.<sup>186</sup> The latter traditionally implies that the dominant firm incurs initial losses in hopes of recovering them subsequently. While predatory practices may imply a similar strategy, these losses are far from being systematic.

In fact, a dominant firm may reduce the quality of its products without having to bear short-term losses. It happens, for instance, when a company creates incompatibility between its product and a new technology that is yet little used, although very promising.<sup>187</sup> The traditional mechanism of predation is reversed as short-term losses will rarely occur,<sup>188</sup> contrary to long-term ones which could appear if there is a decrease in sales.

Predatory innovation also responds to different patterns from those generally found for most predatory practices. Several authors have stressed<sup>189</sup> that all predatory strategies aim at increasing rivals' costs, or, in other words, to allow the dominant firm to sell its goods at a lower price than one of its competitors. This is not necessarily the case for predatory innovation that can aim at purely and simply foreclose them. Predatory innovation thus deserves a legal regime tailored over these different specificities.

## Predatory Innovation: A More Effective Legal Arsenal

When a company is implementing ties, its aim is to derive a *direct* benefit from the practice, which the legal regime of tying allows to address. But the fact that it may also eliminate competition on the long run is not truly taken into account when analyzing the anti-competitive nature of this kind of practice. To the contrary, analyzing predatory innovation includes taking into consideration the

---

<sup>186</sup> Predatory innovation is therefore more difficult to detect than predation based on pricing, see **Terry Calvani & Neil W. Averitt, *Non-Price Predation: An Introduction*, 16(2) J. REPR. FOR ANTITRUST L. & ECON. I, 683 (1986):** “A second great advantage of non-price predation is that it creates fewer legal risks. Its anticompetitive goal may be harder to detect and prove.”

<sup>187</sup> In this example, the consumer may not suffer from a direct harm if a product becomes incompatible with a new technology that is not very popular yet. Nevertheless, the utility of the product is not increased. It may be necessary to wait until the new technology allowing data transfer is popularized so that sales of the incompatible product may actually start to decline.

<sup>188</sup> On the challenge imposed by predatory strategies that incur low costs in the short term, see **Jean Tirole, *The Analysis of Tying Cases: A Primer*, 1 COMPETITION POL. INT'L 1, 21 (2005).**

<sup>189</sup> **Terry Calvani & Neil W. Averitt, *Non-Price Predation: An Introduction*, 16(2) J. REPR. FOR ANTITRUST L. & ECON. I.**

Another author also makes the mistake of assimilating non-tariff predatory practices with those aimed at increasing its competitor costs, see **Pierre F. de Ravel d'Esclapon, *Non-Price Predation and the Improper Use of US. Unfair Trade Laws*, 56 ANTITRUST L.J. 543, 543 (1987).**

fact that the dominant firm precisely aims to modify its products in order to reduce the competitive pressure. Therefore, analyzing the reasons that led the company to adopt such a practice is a fundamental element that allows the company to be condemned.

In fact, **tying disregard the idea of innovation.** Yet, ignoring the anti-competitive nature of an “alleged innovation” deprives the judges of the initial step necessary to apprehend the strategy. A dominant company may aim at eliminating competition under the guise of improving its product, thus proving the development of a more elaborate strategy than a simple tying. The judge must thus determine what constitutes a true or a frivolous innovation.<sup>190</sup> The importance of this distinction requires, once again, a legal regime fully adapted.

---

<sup>190</sup> Or to identify “*sham innovations*,” see **Koren W. Wong-Ervin, Douglas H. Ginsburg & Joshua D. Wright, *Product Hopping and the Limits of Antitrust the Danger of Micromanaging Innovation*, CPI ANTITRUST CHRON. 2 (Dec. 2015).**

## V. CONCLUSION

The regime of general tying is helpful to analyze contractual arrangements. It does not cover the practices of predatory innovation which imply to consider a technical element. On the contrary, the concept of “*technological ties*” must be abandoned for a new and coherent legal regime adapted to the practices it intends to sanction. In fact, only the creation of an independent legal regime for predatory innovation will ensure:

- not to suffer the consequences from the legal uncertainty surrounding the notion of technological ties;
- not to experience the differentiated appreciation of technological ties depending on which continent is concerned;
- to apprehend many practices that cannot be reached under the legal regime of technological ties;
- to grant judges the opportunity to complete a comprehensive analysis of the practices that are today wrongfully analyzed under technological tying;
- to create a legal regime that will avoid legal errors, thereby benefiting innovation.

As we have said, predatory innovation practices are numerous, protean and ever-changing. Only the creation of a dedicated legal regime will enable to address these practices which are threatening innovation as a whole. Working on which legal regime should be applied to predatory innovation is a necessity, but it implies, in the first instance, to recognize the need to deal with it – the purpose of this article. Now is the time to convince the doctrine, the courts and competition authorities to recognize this notion of “*predatory innovation*.” Tomorrow will be the time to work on the specificities of such a regime, which will also imply to consider North American and European antitrust laws.