INNOVATION BY DOMINANT FIRMS IN THE MARKET: DAMNED IF YOU DON´T… BUT DAMNED IF YOU DO?

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Abstract: Innovation is key for dynamic efficiency and one of the best recipes to increase long-term businesses' profits and, at the same time, enhance consumer welfare. Modern high-technology markets offer a perfect account of the importance of innovation for business success: either firms keep apace innovating, or rivals will overcome them and they will be left aside by consumers.

History shows many examples of firms that have failed to sustain the innovation game and have faded away. At the same time it also demonstrates how many successful businesses have gained a powerful position in the market in a very short period of time by offering good innovative products or services to consumers at competitive prices.

Nevertheless, by being successful, firms sometimes have attained a dominant position in the market and that may have meaningful implications from the perspective of antitrust or competition law. In that situation, the experience in many countries shows that innovation decisions by dominant market players can be second-guessed by competition authorities in search for anticompetitive behavior.

This paper will assess the limits and dangers competition law enforcers face in their investigations and sanctioning antitrust proceedings in the assessment of anticompetitive unilateral conduct by innovating firms.

Keywords: Innovation, Competition, dominant position, Antitrust Law, Competition Law, Competition Policy, Unilateral Conduct, market dominance, monopolization
JEL Codes: L41, O31, O38

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> "[*T]he ratio of what is known to what is unknown with respect to the relationship between innovation, competition, and regulatory policy is staggeringly low. In addition to this uncertainty concerning the relationships between regulation, innovation, and economic growth, the process of innovation itself is not well understood. The regulation of innovation and the optimal design of legal institutions in this environment of uncertainty are two of the most important policy challenges of the twenty-first century*."[1]

INTRODUCTION

Competition law enforcement aims at maximizing consumer welfare through guaranteeing the free functioning of markets. By ensuring that businesses are able to compete freely, consumers can choose a variety of goods and services in the market. Markets are not only capable of satisfying consumers' desires but also induce businesses to be efficient, by producing goods and services of different qualities and prices that meet consumer demands.

Current times have stressed the need of innovation by businesses to keep apace with competition and satisfy consumers' desires. It's not longer enough for them to supply markets with a variety of cheap quality products, the right to choice is not enough anymore: consumers demand also new products. Innovation has changed the competitive landscape almost in every industry. Not only it has led to the introduction of new goods and technologies which where unknown before to consumers or to provide new qualities of existing goods, it has also introduced new business methods for manufacturing, marketing and distributing goods in more efficient ways, including also contractual innovations that have eased business and customers' relationships. Obviously, these novel features pervade business performance in network and web-based industries, where

[1] GEOFFREY A. MANNE & JOSHUA D. WRIGHT "Introduction", in GEOFFREY A. MANNE & JOSHUA D. WRIGHT (eds.), *Competition Policy and Patent Law under Uncertainty: Regulating Innovation*, Cambridge University Press 2011, 1.

the New Economy has changed dramatically how businesses compete[2]. But they have also changed the competitive landscape in every industry, increasing firms' incentives to innovate[3].

Presumably this shift should influence somehow the assessment competition law does of businesses' behavior[4]. Conventional antitrust interventions against all sorts of anticompetitive conducts need to be adapted to the new reality. Though most of the antitrust rules have been in force for decades (if not a century), they are featured as open-ended prohibitions or standards that give enforcers wide room to take into account the new times[5]. Other tools in-hand of competition authorities worldwide (advocacy/promotion) have provided them with fresh insights that may be helpful in exploring these new features of business behavior.

This paper will look at the enforcement of the prohibition of single firm anticompetitive conduct or abuse of dominance as one of the realms in which business innovations challenge competition law enforcers. Section 1 of the paper will analyze how innovation fits in the competitive landscape and how it affects, in general, the assessment done by competition law. Then, section 2 will move into the core issues dealt by this paper looking particularly at the substantive rule against unilateral restraints and the numerous difficulties faced in enforcing it taking into account the relevant changes that innovation may introduce in the business competitive landscape. Finally, section 3 will consider some potential changes in the institutional settings of competition law enforcement that may assist enforcers in deciding whether and how to intervene in business environments in which innovation is prevalent.

1. Competition and Innovation.

The relevance of innovation in business productivity and for economic growth is a well-known fact[6], although this applies to every industry, in many high-technology sectors (pharmaceuticals,

[2] DAVID S. EVANS "Antitrust Issues raised by the Emerging Global Internet Economy" *Northwestern University Law Review* 102 (2008) 285-306.

[3] THOMAS M. JORDE & DAVID M. TEECE "Innovation, dynamic competition and antitrust policy" *Regulation: Cato Review of Business & Government*, Fall 1990, 35-36.

[4] Throughout this article "antitrust law" and "competition law" would be used to refer to the same reality: those rules that proscribe or regulate certain types of potential anticompetitive market behavior. However, there are relevant differences among them, see WOLFGANG PAPE "Socio-Cultural Differences and International Competition Law" *European Law Journal* 5/4 (1999) 438–460.

[5] See ROBERT PITOFSKY "Challenges of the New Economy: Issues at the Intersection of Antitrust and Intellectual Property" *Antitrust Law Journal* 68 (2001) 913-915.

[6] JOSEPH A. SCHUMPETER, *Capitalism, Socialism and Democracy*, 3th Ed., Harper Perennial, 1950, 84 ("*in capitalist reality as distinguished from its textbook picture, it is not [price competition] which counts but the competition from the new commodity. The new technology, the new source of supply, the new type of organization... -competition which commands a decisive cost or quality advantages and which strikes not at the margins of the*

biotechnology, computers) it is undoubtedly the main driver of business performance. Firms operating in those industries need innovation to survive and to success. Through Intellectual Property rights legal systems worldwide provide several tools that award protection for innovations that meet some requirements. Intellectual Property Law gives firms incentives to invest in R&D that leads to innovation. Though the presence of IP rights has traditionally made more intricate the enforcement of competition law, it generally does not change enforcers' scrutiny of potential anticompetitive conducts.

Of course, innovation is also good for society. Consumers are better off by being able to access new products created by business firms. Thus, innovation is not only crucial for business to keep a pace with rivals but in many industries it is also the only way to satisfy consumer demands, who no longer have enough with an offer of a variety of products of different qualities and prices, but mainly demand new products.

For some industries, the New Economy has meant businesses face a pressure to innovate as key for (survival and) success, this is clear in high technology industries but also in the Internet-based economy. Products or services of a nature unknown before are being developed and successfully marketed. To succeed, traditional price competition by being efficient producers is not enough, aggressive and disruptive innovations are required.

On the other hand, competition law enforcement is majorly concerned with short-run consumer welfare by preserving market competition as a way to increase surplus by keeping product prices low, guaranteeing choice among a variety of competing products, meliorating product quality and augmenting output[7]. Therefore, consumer harm through price fixing, market sharing or output restriction are the themes of traditional antitrust enforcement.

Being an additional attribute of the business competitive process, enforcers can take into account innovation considerations when they enforce competition law, and so it has occurred in different jurisdictions[8]. Naturally, from another perspective, and due partially to the new reality that business innovative strategies and products have created, the effectiveness of

profits and the outputs of the existing firms but at their foundations and their very lives")

[7] See, for example, JONATHAN B. BAKER "Beyond Schumpeter vs. Arrow: How Antitrust Fosters Innovation" *Antitrust Law Journal* 74 (2007) 577 ("*Competition is good because it leads firms to make more and better goods and sell them for less*").

[8] In the US see BAKER *Antitrust Law Journal* 74 (2007) 590-600. In the EU see PABLO IBÁÑEZ COLOMO "Restriction on Innovation in EU Competition Law" *European Competition Law Review* 41 (2016) forthcoming (cited here from LSE Law, Society & Economy WP 22/2015), who provides evidence that innovation has been *indirectly* taken into account by the Commission in the enforcement of EU Competition law, but argues against the need to incorporate direct innovation considerations in the rules as this would introduce too much uncertainty (however he is looking at how the enforcement action took place, never questioning whether it should have occurred in first place).

national antitrust enforcement may be reduced as territorial boundaries have ceased to be relevant[9].

In any case, innovation can be added as an additional element in the assessment of business conduct that can be deemed to violate the competition law[10]. At the end of the day, business restraints to innovation can be more harmful than the typical restraints to competition[11].

At the same time it may well be that the nature of business innovations introduces further difficulties for the fulfillment of their tasks by competition enforcers[12]. Some high-tech industries these days are based on virtual realities, with strong network effects, involving IP rights that make antitrust law enforcement more complex[13].

In that overall context competition law enforcement should not aspire to directly foster innovation (other tools are available for that aim) but it must not deter it. It should not adopt a more relaxing/deferential or forgiving approach to those cases in which innovation is the main issue at play (and no price)[14], but it must be careful not to intervene mistakenly in cases where there is not a clear or foreseeable restraint to competition.

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[9] GAL & WALLER WEBER *Journal of Competition Law & Economics* 8/3 (2012) 452.

[10] However, it is doubtful whether this is enough, see JOSHUA WRIGHT "Antitrust, Multi-dimensional Competition, and Innovation: Do We Have an Antitrust Relevant Theory of Competition Now?" in MANNE & WRIGHT (eds.) *Competition Policy and Patent Law under Uncertainty: Regulating Innovation*, chapter 1.

[11] See HERBERT HOVENKAMP "Restraints on Innovation" *Cardozo Law Review* 29 (2007) 254 ("*Restraints on innovation are very likely even more harmful than traditional price cartels, which we usually consider to be the most harmful anticompetitive practice. Innovation restraints are almost certainly more harmful than a great many of the exclusionary practices that antitrust has condemned, often without fully understanding them*").

[12] Not only deciding if an anticompetitive action and consumer harm exists but also when antitrust intervention should take place, TIM WU "Taking Innovation Seriously: Antitrust Enforcement If Innovation Mattered Most" *Antitrust Law Journal* 78 (2012) 328, 325-326. See also DAVID S. EVANS & KEITH N. HYLTON "The Lawful Acquisition and Exercise of Monopoly Power and Its Implications for the Objectives of Antitrust" *Competition Policy International* 4 (2008) 203.

[13] MICHAL GAL & SPENCER WALLER WEBER "Antitrust in High-Technology Industries: A Symposium Introduction" *Journal of Competition Law & Economics* 8/3 (2012) 450.

[14] SPENCER WEBER WALLER & MATTHEW SAG "Promoting Innovation" *Iowa Law Review* 100 (2015) 2224. Arguments have been made to incorporate innovation concerns in the enforcement equation to reduce the amount of the sanction and increase consumer welfare in the long-run, see KEITH N. HYLTON "A Unified Framework for Competition Policy and Innovation Policy" *Boston University School of Law Working Paper No. 13-55* (Dec. 13, 2013) rev. June 11, 2014, 10 ("*asymmetric treatment of the innovation benefit and the consumer harm is a reflection of the relative importance of innovation to social welfare. Innovation is necessary in order for any consumer benefit to be realized. The model therefore implies that the optimal penalty should be constrained in order to maintain the innovation incentive*") and KEITH W. HYLTON & HAIZHEN LIN "Innovation and Optimal Punishment, with Antitrust Implications" *Journal of Competition Law & Economics* 10 (March 2014) 1-25.

The lack of knowledge and experience (track record) by enforcers on these issues and the unavailability of information and supporting (contrasted) theories on the implications of many of the new products and services may turn competition law enforcement into a risky venture[15].

Overcoming price-based static antitrust enforcement is a necessity, but difficulties abound in making a quantified assessment of innovative business conducts' impact (or lack of) in consumer and social welfare[16]. Due to the existing tension between competition law enforcement and the many unknown features affecting business decisions and strategies in the field of innovation, there is the risk of mistakes that will lead to condemnation of pro-competitive business conduct with the corresponding effect of chilling innovation (Type 2 error)[17].

Nevertheless, given the available evidence[18], it is probably excessive to talk about an antitrust bias against innovative practices or products[19]. Likewise, it may be to optimistic to think that

[15] For example it is difficult to foresee the impact of platform-centered industries in traditional businesses, WU *Antitrust Law Journal* 78 (2012) 322. Indeed, "*There must be important allowances for both non-arbitrary exclusion and for platforms that are closed or semi-closed to begin with, and stay that way. The platform that declares itself closed from the outset does not gain the advantages of inviting development on an open platform. The problem is with platforms that gain dominance based on a practice of serving as the entire industry's basis for innovation and then later use that position to destroy any threats to their dominance*" (id. 324),

[16] See ALAN DEVLIN & MICHAEL JACOBS "Antitrust Error" *William & Mary Law Review* 52 (2010) 91 ("*dynamic analysis and error inevitably go hand in hand*") and HERBERT J. HOVENKAMP "Schumpeterian Competition and Antitrust" U. of Iowa Legal Studies Research Paper, Working Paper No. 08-43, 2008. For a quantification attempt see THOMAS CHENG "Putting Innovation Incentives Back in the Patent-Antitrust Interface" *Northwestern Journal of Technology and Intellectual Property* 11/5 (2013) 383-430

[17] Distinguished from Type 1 error (false exoneration) anticompetitive conduct continues by the decision not to intervene, see FRANK H. EASTERBROOK "The Limits of Antitrust" *Texas Law Review* 63 (1984) 1-40. Indeed, in the past mistakes have been showed to occur if patents or other IP rights are involved, see, for example, criticizing anti-patent bias of authorities ROBIN JACOB "Competition Authorities Support Grasshoppers: Competition Law as a threat to Innovation", *Competition Policy International* 9/2 (2013) 15-29.

[18] It's difficult to make an overall assessment, but according to ALAN DEVLIN & MICHAEL JACOBS "Antitrust Error" *William & Mary Law Review* 52 (2010) 88: "*the recent history of antitrust litigation has demonstrated beyond dispute that novel practices undertaken by dominant firms can disrupt market stability and harm smaller rivals. In the process, they may sometimes generate enormous benefits for consumers, but on occasions they may prove harmful to consumer interest*".

[19] But see GEOFFREY A. MANNE & JOSHUA D. WRIGHT "Innovation and the Limits of Antitrust" *Journal of Competition Law & Economics* 6 (2010) 153-202 (George Mason Law & Economics Research Paper No. 09-54; Lewis & Clark Law School Legal Studies Research Paper No. 2009-26) 22, 26, 36 and 64 ("*innovation is closely related to antitrust error*"; "*antitrust is hostile to innovation*"; "*inhospitable antitrust rules in the face of technological innovation*"; "*historical and persistent bias embedded in antitrust institutions tends toward a higher probability of erroneous intervention in the presence of innovation*") and, concerning specifically the Microsoft

potential under-enforcement of competition law (type 1 errors) would be always corrected by exuberant competition itself If there are not entry barriers[20].

2. Single firm conduct and innovation.

Although innovation influences the analysis of multilateral restraints to competition[21] and mergers[22], unilateral anticompetitive conduct is probably the realm within antitrust law which has been more severely affected by the innovation features pointed above[23].

The New Economy provides already some illustrative examples of firms that have managed to create markets through innovative strategies and successfully hoard them. Companies in these industries have benefited from their leadership (though this tends to be identified with market domination) [24] and have done nothing more than benefited from their first-mover advantage, being disruptive in innovating and performing efficiently, achieving large market shares[25].

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case, see DAVID MCGOWAN "Between Logic and Experience: Error Costs and *United States v. Microsoft Corp*." *Berkeley Technology Law Journal* 20 (2005) 1185-1245.

[20] See JONATHAN B. BAKER "Taking the Error out of the 'Error Cost' Analysis: What's wrong with Antitrust's Right" *Antitrust Law Journal* 80 (2015) 1-33. See also ALAN DEVLIN & MICHAEL JACOBS "Anticompetitive Innovation and the Quality of Invention" *Berkeley Technology Law Journal* 27 (2014) 40 **("**1. A System That Favors False Negatives Is Preferable. *First, because the severity of a Type I error rises in proportion with the value of the erroneously condemned invention, a bias in favor of Type II errors is justified when a court finds that an impugned innovation entails a material improvement over the prior art. As a result, a defendant should be able to defeat antitrust liability by establishing that its product design carries significant technical advantages. Even though some such inventions may generate negative consequences that exceed the relevant benefits, those cases are so limited and the nature of a Type I error so much more severe that a systemic preference in favor of false negatives is appropriate*").

[21] Such as cooperative agreements between rivals or joint-ventures for innovation, see THOMAS M. JORDE & DAVID J. TEECE "Innovation and Cooperation: Implications for Competition and Antitrust" *Journal Reprints in Antitrust Law & Economics* 28 (1998) 735-758 and "Rule of reason analysis of horizontal arrangements: Agreements designed to advance innovation and commercialize technology" *Antitrust Law Journal* 61 (1992) 579-619.

[22] See MICHAEL L. KATZ & HOWARD A. SHELANSKI "Mergers and Innovation" *Antitrust Law Journal* 74 (2007) 1-85 and "Merger Policy and Innovation: Must Enforcement Change to Account for Technological Change?" in ADAM B. JAFFE, JOSH LERNER & SCOTT STERN (eds.) Innovation Policy and the Economy, Vol. 5, MIT Press, 2005, 109-164.

[23] See WEBER WALLER & SAG "Promoting Innovation" *Iowa Law Review* 100 (2015) 2229.

[24] See FEDERICO ETRO "Competition Policy: Toward a New Approach", *European Competition Journal* 2/1 (2006) 40.

[25] See ETRO *European Competition Journal* 2/1 (2006) 43.

In such situation competition law is concerned that the successful firm may abuse its position in the market by either exploiting consumers or excluding entrance in the market of new players[26]. However, being novel and rapid changing industries, enforcers generally face information problems and lack experience in conducting their antitrust assessment of the business practices and in identifying and quantifying benefits and costs to consumers[27]. Of course, that does not mean that monopolization is un-existent[28], but given the lack of information and experience, and the unavailability of evidence on actual harm to consumers, enforcement actions should be modest and carefully planned[29].

In order to conclude that an anticompetitive unilateral conduct has occurred traditional competition analysis defines the relevant market (*infra* §2.1), then looks at the alleged position of power on that market of the firm (*infra* §2.2) and, finally, examines its presumably abusive behavior (*infra* §2.3). As the following sections underline, none of the three exercises seems to run smoothly in markets disrupted by innovation.

[26] See POSNER *Antitrust Law Journal* 68 (2001) 938 (*"The focus of concern with the application of antitrust law to the new economy is on the methods by which a firm that has a monopoly share of some market in a new-economy industry might seek to ward of new entrants*")

[27] Due to ignorance about (yet) unknown future developments, "`*protecting competition in innovation is a very difficult task for competition law enforcers*", JOSEF DREXL "Anticompetitive Stumbling Stones on the way to a cleaner world: protecting competition in innovation without a market" *Journal of Competition Law & Economics* 8/3 (2012) 512 (proposing need to reform EU law to be able to adequately tackle with challenges posed by innovation). See also JOSEF DREXL "Real Knowledge is to Know the Extent of One's Own Ignorance: On the Consumer Harm Approach in Innovation-Related Competition Cases" *Antitrust Law Journal* 76 (2010) 677-708.

[28] See POSNER *Antitrust Law Journal* 68 (2001) 932-933 *(*skeptical).

[29] See RONALD A. CASS "Antitrust for High-Tech and Low: Regulation, Innovation, and Risk*"* *Journal of Law, Economics and Policy* 9/2 (2012) 2 ("*Antitrust authorities need to exercise special care in making enforcement decisions respecting high-technology industries, starting with appreciation of the potential pitfalls of all regulatory schemes – including antitrust. Traditional problems of regulation generally and of antitrust enforcement specifically are exaggerated in high-technology sectors, where antitrust enforcers' abilities to understand and predict industry evolution are most limited and where enforcement actions are most likely to rest on debatable predicates about the effects of specific conduct*") and SHELANSKI *University of Pennsylvania Law Review* 161 (2013) 1668 *("competition policy for digital platforms should start with caution in its application of existing tools but should not end there")* 1705 *("competition policy should be cautious in addressing digital platforms, but […] antitrust enforcement should also change in ways that make competition analysis more suitable to the characteristics of the Internet and its associate industries").*

2.1. Relevant market definition and innovation.

In order to set the playground in which the antitrust assessment of a potential anticompetitive business action, the relevant market is defined[30]. The classical approach is static and relies strongly in price elasticity of demand to determine product substitutability and define product market, but that can be problematic in markets in the New Economy industries[31].

Despite having solid theoretical foundations, the 'hypothetical monopolist test and the SSNIP test (*Small but Significant No transitory Increase in Price*)` do not tell much in high-technology industries given their static nature and obliviousness of the dynamic features of competition in these markets[32]. For that reason, market definition based on static criteria and which tends to be influenced by prosecutorial incentives would normally lead to too narrow markets being defined. This is not a recipe for good competition policy.

Given the nature of markets for innovation goods and services, which may have platform features (multiple sides) and in which free products or services may be provided, market definition in this context is complex and controversial[33]. It may be difficult to look at market evolution and to account for potential competition from new products or services (markets to be, un-existing yet) [34]. Allegedly, market definition problems already pervaded the cases against

[30] ¶2 of European *Commission Notice on the definition of relevant market for the purposes of Community competition law* (Official Journal C 372, 9/12/1997, 5-3: "*Market definition is a tool to identify and define the boundaries of competition between firms. It serves to establish the framework within which the competition policy is applied*").

[31] See RAYMOND HARTMAN, DAVID J. TEECE, WILLIAM MITCHELL & THOMAS JORDE "Assessing Market Power in Regimes of Rapid Technological Change" *Industrial & Corporate Change* 2 (1993) 321-323; DAVID J. TEECE & MARY COLEMAN "The meaning of monopoly: antitrust analysis in high-technology industries" *Antitrust Bulletin* 1998, 826; J. GREGORY SIDAK & DAVID J. TEECE "Dynamic competition and antitrust law" *Journal of Competition Law & Economics* 5/4 (2009) 612-614. See also IBÁÑEZ COLOMO *European Competition Law Review* 41 (2016) forthcoming (LSE Law, Society & Economy WP 22/2015, 8 (emphasis added). "*Where firms compete primarily –if not exclusively- for the development of new products (or the improvement of existing ones), it may not always be possible to make sense of the impact of a practice by examining the operation of the relevant market. Market definition may prove an impossible exercise. This fact does not mean that firms do not constrain the behavior of one another*".

[32] See CHRISTOPHER PLEATSIKAS & DAVID J. TEECE "The analysis of market definition and market power in the context of rapid innovation" *International Journal of Industrial Organization* 19 (2001) 669-672.

[33] See HOWARD SHELANSKI "Information, innovation, and Competition Policy for the Internet" *University of Pennsylvania Law Review* 161 (2013) 1666.

[34] See DREX *Journal of Competition Law & Economics* 8/3 (2012) 510 (competition without a market or for a future market) and CASS *Journal of Law, Economics and Policy* 9/2 (2012) 29 ("*market definition problem reflects more than the fact that officials so frequently cannot see changes coming that will dramatically alter competitive conditions in an industry*").

IBM and Microsoft[35], and seem to be one of the most controversial statements in in the Google case[36].

2.2. Market dominance/power and innovation.

Unilateral restraints to competition are forbidden because a firm holds a position of dominance or monopoly in the relevant market that allows it to behave independently of its customers, competitors and suppliers[37]. The assessment of market power faces similar difficulties than defining the market[38].

The very same issues of the New economy industries that hamper relevant market definition complicate the assessment of market power. A powerful and leading innovation driven company does not necessarily mean it is a monopolist. Conventionally, competition law enforcement has relied heavily on presumptions based on market structure (market shares and market concentration) as proxies for market power and dominance, but that may not be very operative in this context[39]. However, many of the new products or services in the new economy show the features of winner-takes-all or winner-takes-most markets [40] and, using the conventional tools, that makes them suspect by competition law enforcers. However, those successful innovative firms are unlikely the unconstrained price-setter that can profitably

[35] See CASS *Journal of Law, Economics and Policy* 9/2 (2012) 13-20

[36] See GEOFFREY A. MANNE AND WILLIAM RINEHART "The Market Realities that Undermined the FTC's Antitrust Case Against Google" *Harvard Journal of Law & Technology* 2013, 7-11 and BRIAN J. SMITH "Vertical vs. Core Search: Defining Google's Market in a Monopolization case" *New York University Journal of Law and Business* 9 (2012) 342-355.

[37] ¶30 *NV Nederlandsche Banden Industrie Michelin v. EC Commission* ECLI:EU:C:1983:313 ("*A position of economic strength enjoyed by an under- taking which enables it to hinder the maintenance of effective competition on the relevant market by allowing it to behave to an appreciable extent independently of its competitors and customers and ultimately of consumers*")

[38] See SIDAK &. TEECE *Journal of Competition Law & Economics* 5/4 (2009) 614-616 (analysis should be forward-looking and searching for potential competitors) and POSNER *Antitrust Law Journal* 68 (2001) 938 ("*The combination of intellectual property, network externalities, and rapid growth in consumer demand creates difficult questions involving the ascertainment and measurement of monopoly*").

[39] See RAFAEL ALVES DE ALMEIDA "Market dominance in the New Economy" Revista Direito GV 2/2 (2006) 76, 84, 86 and MICHELE MESSINA "Article 82 and the New Economy: Need for Modernization" *Competition Law Review* 2/2 (March 2006) 81-82.

[40] See DAVID S. EVANS & RICHARD SCHMALENSEE "Some Economic Aspects of Antitrust Analysis in Dynamically Competitive Industries" in ADAM B. JAFFE, JOSH LERNER & SCOTT STERN (eds.), *Innovation Policy and the Economy*, MIT 2002, 10-12.

increase prices without losing sales required by antitrust enforcers for dominance/monopoly to exist[41].

Moreover, even if dominance and market power seemed to exist, that would not mean much if entrance by new competitors in the market is not difficult, making dominance/monopoly contestable. The attractiveness of entrance will be sure if profits are high as it occurs in some of these industries. Therefore, market power can be short-run and vulnerable.

However, in practice the analysis of potential entry barriers in many of the New Economy markets is not realistic and highly speculative. Though there may be high fixed/sunk costs in these industries, marginal costs of production are frequently close to zero. On the other hand, it is true that the presence of IP rights may hinder market access by rivals[42].

Though network effects may be considered to foreclose the market and discourage further innovation by the dominant firm[43], it would not be the case in most instances[44]. At the end of the day, aggressive competition is at play in these industries and constant/rapid changes in the market may soon and easily erode the position that a firm holds in the market[45]. For that same reason, everything that extoled the innovative firm in the market would presumably incentivize it to follow-up investments in innovation[46].

[41] See EVANS & SCHMALENSEE *Innovation Policy and the Economy*, MIT 2002, 19-20.

[42] Occasionally, the most critical asset that gives these innovative firms dominance is the huge amount of customer information and data some of these firms are able to amass, see SHELANSKI *University of Pennsylvania Law Review* 161 (2013) 1678-1682.

[43] See RICHARD A. POSNER "Antitrust in the New Economy" *Antitrust Law Journal* 68 (2001) 939. Moreover, potential network effects could be further strengthened by any switching costs (thus, aiding the preservation of market power), if customers incur in costs if they switch from one product to another, see TEECE & *Antitrust Bulletin* 1998, 828-831.

[44] See, concerning technological change, DANIEL F. SPULBER "Unlocking Technology: Antitrust and Innovation" *Journal of Competition Law & Economics* 4/4 (2008) 915–966 (given that markets provide incentives for firms' coordination and interoperability). *In general, see* FRANK H. EASTERBROOK "information and antitrust" *University of Chicago Legal Forum* 2000, 6-7 and CENTO VELJANOVSKI "EC Antitrust in the New Economy: Is the European Commission's View of the Network Economy Right?" *European Competition Law Review* 22 (2001) 116-117.

[45] See TEECE & COLEMAN *Antitrust Bulletin* 1998, 808 ("*antitrust authorities need to be cognizant of the self-corrective nature of dominance engendered by regime shifts*").

[46] See CASS *Journal of Law, Economics and Policy* 9/2 (2012) 30 ("*exceedingly difficult for government officials to discern the critical factors that explain what actually makes a particular firm dominant, the factors that affect the durability of dominance, or the kinds of change in the market (either on the demand side or the supply side) that could dramatically erode that dominance*").

2.3. Conduct analysis and innovation.

As it is widely known, even if a firm had a dominant position that is not forbidden by law: indeed that is very much regarded as one of the incentives for firms to compete more in markets[47].

As any other ordinary firms (lacking and alleged dominant position), successful innovative firms should not be precluded to compete freely in the market. Therefore, decisions to prosecute them for conducts suspect to be anticompetitive need to be based in factual evidence of harm and on a solid economic theory explaining it[48].

Even taking for granted the risks of a defective market definition and of a mistaken assessment of market power (*supra* 2.1 and 2.2), monopolizing the market that a firm has managed to create through innovation –eventually gaining IP rights- leading to the exclusion of competitors is not deemed an infringement of antitrust law; only exceptionally should the innovating monopolist forced to share access to it[49].

In the analysis of conducts that can be deemed abusive, competition law suffers from the very same problems described before in defining the market and finding market power. At first, it appears that pricing abuses should not be expected and if there are they tend to be intricate predatory pricing cases. In analyzing potential predation the economic characteristics of the New economy industries make traditional cost analysis useless, and regularly it neither seems that the required abuse element in the long run can be met[50]. If any, the predation that could occur would have to be rather with innovation than with prices (and neither so much)[51].

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[47] "*The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free-market system. The opportunity to charge monopoly prices-at least for a short period-is what attracts "business acumen" in the first place; it induces risk taking that produces innovation and economic growth. To safeguard the incentive to innovate, the possession of monopoly power will not be found unlawful unless it is accompanied by an element of anticompetitive conduct*" *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398,410-411 (2004) (Scalia).

[48] See JOSHUA WRIGHT "Evidence-based antitrust enforcement in the Technology Sector" *CPI Antitrust Chronicle*, March 2013, 1-14.

[49] Regarding EU Law, see IBÁÑEZ COLOMO LSE Law, Society & Economy WP 22/2015, 17.

[50] See EVANS & SCHMALENSEE *Innovation Policy and the Economy*, MIT 2002, 22-25.

[51] See RICHARD GILBERT "Holding innovation to an Antitrust Standard" *Competition Policy International* 3/1 (2007) 77 ("*While these analytical approaches differ, they wind up essentially in the same place: innovation by a single firm is not anticompetitive if it has a plausible business justification and is not accompanied by other anticompetitive conduct. Indeed, this is what most courts have concluded when faced with allegations of predatory innovation*").

It is difficult to craft a plausible test of what inventions are deemed anticompetitive, the predatory or exclusionary condemnation should be reserved for those cases in which technological improvement forecloses competition (and not merely reduces it[52]) and cannot be considered a genuine innovation [53]. The harmful effects of such innovations without technological merit increase in networked markets and in the pharmaceutical industry where the negative consequences are propagated (either to multiple users or in time due to the extension of the duration of the patent)[54].

Moreover, many other conducts that are efficient and make business sense may simultaneously raise rival costs, without necessarily being deemed anticompetitive[55]. That is the case, for example, of business decisions concerning the integration of different and separate products (through tying or bundling) that may be efficient (innovative and cost reducing) and also benefit consumers [56]. Occasionally that could be inspired in exclusionary/predatory reasons, the assessment depending on the competition conditions in both markets: and even then it may well have a pro-competitive explanation (efficiency) and be good for consumers[57]. In sum, it seems sound that any conduct analysis should overcome any form-based approach (automatic

[52] Aside from other structural factors in the market that make it possible, the conduct forces competitors to exit the market and it is it's only justification (i.e. profitable), see JANUZ A. ORDOVER & ROBERT D. WILLIG "An Economic Definition of Predation: Pricing and Product Innovation" *Yale Law Journal* 91/1 (1981) 9, 25-26, 29-30 (though with non-price decisions generally we will lack that data to make such an assessment). But see J. GREGORY SIDAK "Debunking Predatory Innovation" Columbia Law Review 83/5 (1983) 1121-1149.

[53] See DEVLIN & JACOBS *Berkeley Technology Law Journal* 27 (2014) 34-42..

[54] See JONATHAN JACOBSON, SCOTT SHER & EDWARD HOLMAN "Predatory Innovation: An Analysis of Allied Orthopedic v. Tyco in the Context of Section 2 Jurisprudence" *Loyola Consumer Law Review* 23 (2010) 8-10.

[55] See CASS *Journal of Law, Economics and Policy* 9/2 (2012) 8 *("antitrust enforcement authorities can essentially initiate action against any leading firm for conduct that on its face is not readily distinguished from the ordinary business operations of a competitive firm"***).**

[56] See DENNIS W. CARLTON & MICHAEL WALDMAN "Tying" in *Issues in Competition Law and Policy*, vol. 3, ABA Section of Antitrust Law 2008, 1858-1879; DAVID S. EVANS & MICHAEL SALINGER "Why do firms bundle and tie? Evidence from competitive markets and Implications for Tying Law" *Yale Journal on Regulation* 20 (2005) 37-89 and EVANS & SCHMALENSEE *Innovation Policy and the Economy*, MIT 2002, 22-25. In the merger context, *see* EU COMMISSION, *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings, OJ C 265, 18.10.2008, ¶93 ("Tying and bundling as such are common practices that often have no anticompetitive consequences. Companies engage in tying and bundling in order to provide their customers with better products or offerings in cost-effective ways. Nevertheless, in certain circumstances, these practices may lead to a reduction in actual or potential rivals' ability or incentive to compete. This may reduce the competitive pressure on the merged entity allowing it to increase prices*")

[57] See ETRO *European Competition Journal* 2/1 (2006) 44.

illegality) and instead be cautious (as there may be precompetitive explanations), focused and based on the observed markets effects of conducts[58].

3. Competition Law Enforcement and Innovation: Institutional implications.

The antitrust rules and doctrines governing anticompetitive conduct are the same that they have been in place for decades, but their enforcement can be adapted to the particularities of the industries driven by innovation[59]. Given the openness of competition rules and the incentives rival firms may have to use them as a weapon to earn what the market denies, enforcement needs to be very prudent[60].

Incorporating dynamic analysis is a difficult task in which the enforcer will have to process data and information concerning the current situation of industries and their likely evolution in the future[61]. It will have to deal with complex evidence and only act upon the clear indication of anticompetitive behavior.

Indeed, given the uncertainty that surrounds the assessment of business behavior regarding innovation and in other to minimize potential errors of unjustified intervention by competition authorities, enforcement can be re-structured to become an experimental process that adequately manages that uncertainty[62]. That can affect the way the investigation is conducted by the enforcers and also how they make their assessment, introducing also some flexibility in the potential remedies adopted.

The experimental features of the process would introduce a collaborative joint learning approach in enforcement. Procedures should introduce ways to incentivize defendants to share

[58]See DREXL *Antitrust Law Journal* 76 (2010) 708 and SHELANSKI *University of Pennsylvania Law Review* 161 (2013) 1673

[59] The main problem may have more to do with enforcement than with the antitrust rules themselves, LEMLEY *Columbia Business Law Review* 2011, 637-653. POSNER *Antitrust Law Journa*l 68 (2001) 925-943.

[60] Specially in private claims DEVLIN & JACOBS "Antitrust Error" *William & Mary Law Review* 52 (2010) 81, 127 & 128.

[61] See DOUGLAS H. GINSBURG & JOSHUA D. WRIGHT "Dynamic Analysis and the Limits of Antitrust Institutions" *Antitrust Law Journal* 78 (2012) 2 ("*The practical value of proposals to increase the use of dynamic analysis must be evaluated with an eye to the institutional limitations that antitrust agencies and courts face when engaged in predictive fact-finding*").

[62] In the merger review context, referring to decision theory (with references to older works), see MATTHEW JENNEJOHN "Innovation and the Institutional Design of Merger Control" *Journal of Corporation Law* 41 (2015) 101-149.

information and its implications for market competition with the enforcing authorities, avoiding that the later are overwhelmed by data and preventing assessment failures. Naturally, the prosecutorial features of the enforcement actions would require the introduction of adequate safeguards to guarantee the defendants' rights, but the flexibility introduced would run in their favor.

Giving the lack of information and rapid evolution of these industries, similar difficulties affect the design and oversight of any potential remedies decided in competition enforcement actions. The peculiar features of innovation driven industries make more difficult the task of competition agencies[63]. For that very same reason, antitrust enforcers should be modest in their goals of merely preventing and correcting anticompetitive actions; otherwise, they risk turning antitrust into something different[64].

[63] See SPENCER WEBER WALLER "Access and Information Remedies in High-Tech Antitrust" *Journal of Competition Law & Economics* 8/3 (2012) 575-593.

[64] See ALAN DEVLIN "Antitrust as Regulation" *San Diego Law Review* (2012) 823-877.

Conclusions.

Competition law enforcement covers all industries and it has been a good tool to deter anticompetitive behavior and enhance consumer welfare worldwide. In the past enforcers had dealt well with practices in which the business anticompetitive conduct had a clear or potential impact on prices and output. Introducing innovation in the assessment is a challenge that calls upon considering dynamic efficiency as the parameter for analyzing firm's behavior. Unilateral conduct by dominant players in the New Economy is one of the realms in which competition enforcers face a more difficult task. This paper has looked at the different stages in which enforcement may run afoul; from defining the relevant markets and examining the competitive restraints and whether a firm holds market dominance to scrutinizing business actions which may have a negative (but non price) effect in consumer welfare. Given the lack of information and experience enforcers have on these novel markets and the negative effects that over-enforcement may provoke in deterring conduct which is not clearly anticompetitive and bad for consumers but the contrary, it seems preferable to call for a cautious and prudent approach in which sanctions are only imposed when negative effects in the market can clearly ascertained.

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