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Mergers & Acquisitions of Innovative Start-ups through the Prism of Competition Law

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Abstract

This dissertation was written as part of the LLM in Transnational and European Commercial Law, Banking Law, Arbitration/Mediation, at the International Hellenic University.

Innovation has become a buzzword of EU policy in the last decade. The prevalence of this term is even more intense in EU competition law, where innovation-related literature is at its spike. There is, however, one aspect of the relation between innovation and competition that remains rather underexplored by literature and policy. That is competition concerns raised in mergers between an incumbent and an innovative start-up, which merger will not have an immediate effect on the relevant market structure.

This thesis finds that the current EU merger control model is incapable of drawing such mergers under its scope, due to its static nature and its indirect assessment of innovation concerns. This way, a significant amount of concentrations potent of causing impediments to effective competition remain uncontrolled. This thesis also proposes the introduction of a dynamic contemplation of innovation-based mergers, which would allow the assessment of their long-term effects on innovation, and the activation of respective remedies.

Keywords: Disruptive Innovation, Start-ups, Merger Control.

Fotios Filios-Metentzidis
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Preface

Typing the last words, few minutes before submission of my thesis, I would like to express my sincere gratitude to my supervisor, Dr. Pavlos Masouros. His inspiring lectures, as well as our discussions on the forward-looking issues of EU Competition Law placed the seed for this thesis to be realized.

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Introduction – Promotion of Innovation as an Objective of EU Policy

Much ink has been spilled in the “*Battle for the Soul of Antitrust*”¹. There have been many different approaches as to which political and economic goals competition law should pursue, and how these goals are better served. The objectives of any given national competition law may vary from time to time and are aligned with that State’s socio-economical conceptions. However, if one inference had to be drawn from that “battle”, it would be that competition law, perhaps more than any other field of law, *is in fact* being utilized as a means to pursue political and economic goals.

The European Union is no exception in harnessing competition law in the prosecution of political and economic aims. Although not manifesting its objectives explicitly, it has by now been well documented in practice and case law that EU Competition law orbits mainly around principles as promoting consumer welfare and market efficiency²³. From a systemic point of view, the EU adopts an economic policy which is aligned with the “principle of an open market economy with free competition”⁴.

In the past decade, however, the EU policy has manifested a remarkable interest in endorsing concepts such as entrepreneurship and innovation, as the core of its strategy to recover from the economic crisis. Indeed, the EU contemplates innovation and entrepreneurship as valuable means to create economic wealth and restore Europe’s international competitiveness. In this light, the Union currently puts vast efforts and funds through various policies, intended to improve its ecosystem for entrepreneurship and innovation.

Empirically, the process of innovation is highly dispersed in the markets. Conceiving and planning an idea that might have a fundamental impact on the markets is a matter of talent and flair, and does not require -at least at this point- the disposal of capital and infrastructure as a prerequisite. Therefore, breakthrough innovations often come from completely new entrants to the market, whose reason of entry is to

¹ Fox E.M., *The Battle for the Soul of Antitrust*, 75 Calif. L. Rev. 917 (1987).

² Monti G., *EC Competition Law*, Cambridge University Press (2007), p. 83

³ Ezrachi A., *EU Competition Law Goals and the Digital Economy*, BEUC Discussion Paper, (2018), p. 4

⁴ Art. 119 TFEU.

make profit of that idea⁵. The implementation of the innovative idea, however, is much more demanding, since this phase requires specialized personnel, managerial skills, know-how regarding the relevant market, and of course funding. But even when this phase of the innovation process has been successfully mastered, the innovative project must be launched to the market and be effectively commercialized, by surpassing any market entry barriers. It is usually this stage of market introduction of the innovative project that poses the most difficulties to a start-up, since the entry barriers in innovation-based markets are usually high⁶. This, in turn, creates the obvious incentive for startups to develop their innovative projects up to the possible extent, and then sell out to a market incumbent, which will be in a position to finalize and commercialize the innovation more effectively⁷.

At the same time, the incumbents in an innovation-based product market that is prone to disruptive innovation, will always have an interest to acquire such innovative projects⁸ that may have an impact on the status quo of the market where they are competing. This usually happens at a price very attractive to the entrepreneur. In fact, a breakthrough innovation may be a game-changer in a given product market, since it might have the capacity to alter the current market shares of the competitors to the benefit of the firm holding the innovative project, and thus define the market leader⁹. Incumbents, therefore, have the incentive not only to innovate themselves, but to also acquire promising innovative projects from startups, in order to A. deprive their competitors from gaining access to that project first, and B. to make use of that innovative asset in the context of competition against the other incumbents, in order to secure a greater market share¹⁰ and, hence, higher profits. These interests shall be referred to as interest A. and B. for future reference.

The issue arises when the acquiring firm contents itself to interest A., i.e. to solely keep the disruptive innovation away from its competitors, or to prevent a new competitor from being born, mainly because that firm already holds a dominant

⁵ OECD – *Considering non-price effects in merger control – Background note by the Secretariat*, DAF/COMP(2018)2, p. 8

⁶ Tesink W., *Barriers on market introduction of innovative products*, University of Twente.

⁷ Phillips G.M., Zhdanov A., *R&D and the Incentives from Merger and Acquisition Activity*, (2012).

⁸ *Ibid.*

⁹ Marshall G., Parra A., *Mergers in Innovative Industries: The Role of Product Market Competition*, (2017), p. 3.

¹⁰ *Supra* 5, p. 7

position in the market, as well as the desired market share vis-à-vis its competitors. In this case the acquiring incumbent may have no interest to deploy capital and human resources for the further development and market introduction of that innovation being developed by the disruptive start-up (often being referred to as “maverick firm”¹¹). This is because the acquiring incumbent would not anticipate any significant returns from these efforts, given the fact that it already holds the desired market share, while the introduction of the new, innovative product to the market could also cause cannibalization of its profits by replacing that firm’s products already established in the market. In this light, the interests of the acquiring firm are best served by acquiring the innovative project and simply shutting it down. This practice has been referred to as a “killer acquisitions”¹².

This, of course, creates a constellation which undoubtedly causes considerations to the administrative authorities; as it has been mentioned above, and as will be further analyzed in the next chapter, the EU has devoted significant organizational efforts and funds to see that innovative maverick firm sprouting. When the latter succeeds in developing an idea that attracts the market’s attention, and which thereby by inference has the potential to open new markets, create new jobs and overall produce welfare, the administration sees that potential being defused by a market dominant in an anticompetitive manner. It is therefore clear that an interest in intervention exists on behalf of the administrative authority.

There has been, however, much literature on when and under which conditions administrative intervention in mergers and acquisitions of innovative startups should be warranted¹³, since there are utterly fine balances to be kept. On the one hand, as seen above, there is the interest of the administrative authority to maintain competition levels and to combat abusive practices on behalf of the dominant incumbent. On the other hand, there are the interests of the entrepreneur, who conceived the idea in the first place, and seeks for a lucrative exit from his or her innovative project; and selling the startup to an incumbent of the mainstream market is one of the most usual ways to achieve entrepreneurial exit. Overregulating merger

¹¹ Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, (2004/C 31/03), para. 42.

¹² Cunningham C., Ederer F., Ma S., *Killer Acquisitions*, (2018).

¹³ Sokol D.D., *Vertical Mergers and Entrepreneurial Exit*, available at <https://ssrn.com/abstract=3217095>.

control in innovative startups, and thereby constricting exit opportunities for entrepreneurs, would have quite the adverse effects from the ones pursued by the respective policies implemented by the EU, as it would afflict the entrepreneurs' incentives, and thereby render the EU an innovation-hostile market.

In this dissertation I examine the current considerations regarding acquisitions of innovative start-ups, and in particular the practice of innovation-dumping acquisitions. The findings are that this aspect of the broader topic of the relation between mergers and innovation is underexplored. In order to stress out the political aspect of these considerations, I dedicate a brief chapter to the policies currently undertaken by the EU to promote innovation, and how these policies interrelate with EU competition policy. In the second Chapter, I review the main literature on the relation between market competition and incentives to innovate, while citing empirical evidence that acquisitions of innovative startups with the aim of dumping their innovative efforts, are in fact an existent matter. Subsequently, I examine whether the current EU approach on innovation-based merger control is sufficient to encounter this phenomenon, and what recent steps have been taken towards adjusting merger control to innovation-based concerns. In another chapter the role of innovation considerations in administrative intervention in the EU is explored. In the final part, the adoption of a dynamic contemplation of innovation-based mergers control is proposed.

1. Promotion of Innovation as an Objective of EU Policy

In the post economic crisis era, few policy fields in the EU attract the spotlight as much as the fields of entrepreneurship and innovation. Indeed, the EU currently runs various action plans and strategies which aim to boost the creation and development of SMEs, as well as to promote innovation and create an innovation-friendly environment in the single market.

In fact, the economic crisis experienced in the EU from 2008 and on, left the Member States with over 25 million unemployed and a devastated environment for SME's¹⁴. The reignition of entrepreneurship is being viewed as a key measure to encounter the still ongoing reverberations of the crisis, as it is anticipated to have a positive impact on economic growth and job creation in the EU¹⁵. To this direction, the Commission has taken up numerous initiatives, such as the "Entrepreneurship 2020 Action Plan" and the "Start-up, Scale-up Initiative", which seek to foster entrepreneurship by implementing measures that mainly facilitate access to finance, improve the business environment for start-ups by dealing with bureaucratic impediments, and offer second chances to failed start-up attempts.

Innovation, on the other hand, is also contemplated by the Commission as a key factor to enhance European competitiveness in the global market, which, in turn, is expected to lead to the creation of new jobs and to economic prosperity. This is particularly highlighted in the Commission Communication titled "For a European Industrial Renaissance"¹⁶, where the importance of industry for the prosperity of the EU is stressed, since it accounts for 80% of Europe's exports. In this context, it is inferred that the modernization and evolution of the European industry, which is by and large a product of the uptake of innovation in the market, is crucial to its competitiveness in the global market, and by extension, to the prosperity of Europe.

Acknowledging the key-role it plays in maintaining European welfare, the Commission is currently running various initiatives to promote innovation and its

¹⁴ Communication from the Commission "Entrepreneurship 2020 action plan", COM (2012) 795 final of January 2013, p. 3.

¹⁵ Communication from the Commission "Towards a job-rich recovery", 18.4.2012, COM(2012) 173 final.

¹⁶ Communication from the Commission „For a European Industrial Renaissance, 22.1.2014, COM(2014) 14 final.

uptake in the market. In fact, the Union's interest in promoting research and development, and its commitment to adopt the respective policy measures is enshrined in Art. 179 to 190 TFEU.

The main instrument in implementing those policies are the framework programmes, which manifest the goals and priorities of the Union for a given, multiannual period, and provide for the respective funding. The Europe 2020 Communication from the Commission¹⁷, which manifests the objectives and priorities to be achieved in the current decade, identifies the lower rates of innovation as one of the causes of Europe's lower growth rates, compared to its economic partners, and stresses out the importance of policies encouraging innovation for maintaining Europe's international competitiveness. In this context, the Europe 2020 strategy launched one of its flagship initiatives named Innovation Union¹⁸, which is a comprehensive framework programme, aiming at fostering innovation in all its stages, i.e. from conceiving the idea until commercializing it.

The dedication of the Union to implement the policies dictated by Innovation Union, is made clear through the financial instrument of that framework programme, namely Horizon 2020,¹⁹ which is a research and discovery programme with almost 80 bn. Euro of funding available until 2020. Notably, an important part of the Horizon 2020 programme focuses especially on innovation in SMEs, manifesting how the EU values the smaller players when it comes to generating innovative projects.

In light of the above, it is clear that promotion of innovation has taken its place as a key consideration of the post-crisis policy of the EU, with the latter putting a lot of organizational effort and funding into pursuing that consideration. What is also clear is that such fundamental political initiatives may not leave competition policy indifferent. All the more, the Europe 2020 Communication has made it explicit that one of the objectives of competition policy is to *"ensure that markets provide the right environment for innovation"* as well as *"to incentivise innovation"*²⁰.

¹⁷ Communication from the Commission, "Europe 2020", 03.03.2010, COM(2010) 2020.

¹⁸ Communication from the Commission, "Europe 2020 Flagship Initiative – Innovation Union", 06.10.2010, COM(2010) 546 final

¹⁹ Communication from the Commission, "Horizon 2020 – The Framework Programme for Research and Innovation", COM(2011) 808 final.

²⁰ *Supra* 17, p. 19.

2. The Relation Between Competition and Innovation

The importance of innovation to the competition of a given market has been asserted long ago. However, as we have been advancing more and more into the digital age, innovation considerations vis-à-vis market competition have been progressively centered under the spotlight of competition authorities and policymakers²¹. In fact, since the past few decades there have been plenty of cases where competition authorities in the EU and the US were confronted with theoretical questions (usually in the context of proposed merger investigations) such as how market structure affects innovative efforts of the competing firms, and under which market conditions the competitors' incentives to innovate are best served. Despite the fact that these questions have been around for quite a while, there is by now no clear-cut answer²².

This nebulous interrelation between market concentration and innovation has placed a gordian knot, many valiant economists have put their efforts into solving ever since. The pursuit of finding a formula which would shed light on the link between market competition and incentives to innovate has in turn fueled an exciting theoretical debate, which is still ongoing and of course relevant today.

Market Concentration and Incentives to Innovate

Nearly every attempt to analyze the link between competition and incentives to innovate begins with a reference to Joseph Schumpeter, who was probably the first to methodically examine the connection between those two notions²³, and has not unjustly been referred to as "*The Prophet of Innovation*"²⁴.

In a simplification of Schumpeter's view, the lower the competitive pressure faced by a given firm in a given market, the more its incentives to innovate are

²¹ Kern, B., R. Dewenter, and W. Kerber (2016), "*Empirical Analysis of the Assessment of Innovation Effects in U.S. Merger Cases*", *Journal of Industry, Competition and Trade*, Vol. 16.

²² Gilbert, R. "*Looking for Mr. Schumpeter: Where Are We in the Competition-Innovation Debate?*" *Innovation policy and the economy* (2006), 6: p. 206.

²³ Schumpeter J.A., *Capitalism, Socialism & Democracy*, Routledge London & New York, 1942.

²⁴ McCraw T.K., "*Prophet of Innovation: Joseph Schumpeter and Creative Destruction*", Harvard University Press.

endorsed. In this view, when a firm faces aggressive competition, it will be urged to devote its resources and efforts in surviving that competition, thus being stripped of the necessary “convenience” to invest in innovative projects. Schumpeter makes this inference by observing that nearly every breakthrough innovation of his age, which had a positive impact in the quality of life of the consumers, is to be attributed to the large-scale firms of a given innovation-based market, rather than to the small players²⁵. By implying that large firms are most usually located in concentrated markets, Schumpeter identifies a link between market concentration and innovation output, in the sense that the more concentrated a market is, the more conducive are the conditions for the innovative efforts of that market’s firms.

Schumpeter finds that, in a concentrated market, the driving force behind the efforts of a firm to innovate is the prospect of achieving market dominance through that innovation, and, subsequently, exploiting that dominance to the maximum extent, so as to increase its profit margins. Hence, in the Schumpeterian view, the incentives to innovate are generated by the interest of a firm to cause imperfect competition conditions in that market, to its own benefit. Schumpeter therefore suggests that policies aiming at correcting these imperfections are counterbalancing the firms’ incentives to innovate. Instead, some degree of competition imperfection has to be allowed²⁶, in order to increase the stakes in competition for innovation: by awarding to the market dominant the price of (some degree of) dominance exploitation, one also increases the incentives of the competing firms to overthrow this dominant through innovation, taking its place and reaping in turn the fruits of that innovation.

Kenneth Arrow, on the other hand, has expressed a view which has for long been (and still is being) contemplated in literature as the exact opposite to the above theory²⁷. He identifies that in a monopolistic market, full appropriability of the innovation by the monopolist, meaning its full exploitation by the inventor only, could indeed increase the incentives of the latter to innovate. However, Arrow finds that this appropriability effect is offset by the monopolist’s disincentive to engage in costly R&D projects, while already dominating the market. In other words, the only effect of that

²⁵ *Supra* 23, p. 82.

²⁶ *Ibid.*

²⁷ Arrow, K., “Economic Welfare and the Allocation of Resources to Invention.” In *The Rate and Direction of Inventive Activity: Economic and Social Factors*, Princeton University Press (1962).

firm introducing a new product in the market, would be the displacement of its own previously established product. This cannibalization effect is according to Arrow what deters a market dominant from innovating, since it can maintain its market position and profits without the need to engage in innovative efforts. Therefore, it can be inferred that a firm having already secured a desired market share and achieving lucrative profits, will lack incentives to innovate, and will rather have an interest to maintain the current status in the market. By inference, it is according to Arrow the intensity of product market competition, or in other words uncertainty about one's future market position, that will lead an incumbent firm to innovate.

More Recent Approaches

In the past few years, as innovation-centred policies and economic considerations have again invigorated the debate about the link between competition and innovation, new semantic approaches on this issue have appeared, which compose and decompose the pioneer theories mentioned above.

For instance, Aghion et al. propose a nonlinear model, where the relation between product market competition and innovation output takes the form of an inverted U-shape²⁸. According to that model, innovation in a market increases with the increase of product market competition, however only up to a certain point. Beyond that point of competition intensity, any further increase in competitive constraints will have as a result a decrease in innovation output, giving an inverted U-shape to the chart. According to this view, it is the markets with more neck-to-neck competitors which provide for more conducive conditions for innovation, whereas the small players, as well as the dominant firms will generally have less incentives to innovate.

Carl Shapiro, on the other hand, in his seminal contribution to the relevant debate²⁹, departs from theories that bind innovation output to the product market competition, and rejects the logic of a universal theory able to explain the link between competition and innovation. Furthermore, Shapiro finds that the Schumpeterian and the Arrowian views are not at all conflicting, but rather mutually

²⁸ Aghion, P., et al., "*Competition and Innovation: An Inverted-U Relationship*", Quarterly Journal of Economics, Vol. 120 No.2 (2005).

²⁹ Shapiro, C., "*Competition and Innovation: Did Arrow Hit the Bull's Eye?*" in *The Rate and Direction of Inventive Activity Revisited*, J. Lerner and S. Stern (eds.), University of Chicago Press (2012).

complementing in their core. Indeed, Shapiro identifies that there is truth in Arrows view that a firm with a secured market share has in general less incentives to innovate, rather than to maintain the current status in the market. Schumpeter's view, on the other hand, that the driving force behind innovation is the firm's anticipation of market power, is also granted. Shapiro finds that the common point between those two theories is that innovation is favoured in a market that is contestable, in the sense that a number of firms compete to extort future sales from one another³⁰.

In that light, Shapiro introduces three stand-alone principles, namely the "Contestability", the "Appropriability" and the "Synergies" principles, which are consistent with both the Schumpeterian and the Arrovian view, and which provide a comprehensive guide in assessing the levels of innovation incentives in a given market. The Contestability principle refers to the mutual efforts of a market's competing firms to extort sales from one another, by enhancing the value offered to consumers. Rationally, where there is contestability, there are incentives to innovate. The Appropriability principle focuses on the innovating firm's capacity to preserve the benefits of its innovation for itself, avoiding imitations and spill-overs in the market to the possible extent. Why appropriability is a *sine qua non* to a firm's incentives to innovate, is easily understandable. Last but not least, the Synergies principle is somewhat to a counterbalance to appropriability, which suggests that the composition of diverse ideas and assets deriving from diverse market players, is vital to the innovation process. Shapiro puts the Synergies principle to the "ability" end of the innovation equilibrium, rather the "incentives" one, where the other two principles are placed. In fact, the combination of diverse human resources and the integration of ideas spilling over from the rest of the market is attributed to a firm's *capacity* to innovate, whereas the incentive to do so is in this case presupposed.

The Impact of Mergers on the Incentives to Innovate

The relation between competition and innovation is contemplated by the competition authorities profoundly in the frame of merger control. That is, if innovation levels matter for an economy, competition authorities will have a ground to

³⁰ *Ibid*, p. 401.

scrutinize the impact of a proposed merger between two innovation-based firms on the incentives to innovate, mainly in regard to the merged firms, but also as to their competitors. Although the abovementioned pioneer economic theories on the relation between competition and innovation may provide valuable guidance to this purpose, it has been argued³¹ that they do not suffice in illustrating the consequences a merger might cast on the relevant market's innovative incentives. Therefore, there is currently a dynamic debate in progress, which consists of literature aiming to inform competition authorities on the particularities of this matter, by setting up theories on when innovation is harmed in the context of a merger and suggesting the relevant evidence to be taken into consideration in this regard.

For instance, Federico et al.³² find that a merger between two firms competing in innovation will always have a negative impact on the merging firms' incentives to innovate post-merger. This is attributed mainly to the fact the pre-merger innovation competition between the two firms at hand is seized after the merger. In other words, prior to the merger the relevant firms compete in innovation in order to appropriate shares of the customer bases from one another. This contest is internalized after the merger and, hence, muted. Federico et al. purposely leave pro-innovation efficiencies induced by a merger out of scope, so as to measure only the incentives, rather than the ability of the merged firm to innovate. Finding that there is a consistently negative relation between mergers and innovation levels post-merger, Federico et al. argue that the inverted-U shape is not relevant when considering merger cases.

Jullien and Lefouili, on the other hand, advocate against the predisposition that a merger will unilaterally cast a negative effect on innovation³³. While starting from the same point as Federico et al., i.e. that a merger causes internalization of the competitive constraints casted by the merging parties against each other, which might decrease the incentives to innovate, Jullien and Lefouili identify another effect which might cause quite the opposite outcome. In a somewhat Schumpeterian approach, these authors argue that the decreased levels of product market competition which

³¹ Jullien, B., Lefouili Y., "Horizontal Mergers and Innovation", (2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3135177.

³² Federico, G., Langus G., Valletti T., "A simple model of mergers and innovation", CESifo Working Papers No. 6539, (2017).

³³ *Supra* 31, p. 26.

take place after the merger, will grant the merged entity the ability to extract higher profits from its future products, thus invigorating its interest to innovate. The net effect between those two counterbalancing forces has to be assessed in a case by case scenario. Hence, Jullien and Lefouili argue that a given merger, although it will almost certainly silence the negative externalities casted between the merging parties prior to the merger, may nonetheless also have positive effects, which might even prevail. Therefore, these authors suggest that competition authorities should as a rule have a neutral stance vis-à-vis innovation based mergers, and reckon not only the negative effects to the incentives to innovate, but also the positive ones in each concrete case.

This approach is in line with Shapiro³⁴, who also examines the connection between competition and innovation in light of a merger-setting. Shapiro also argues that a negative “contestability” effect of a merger (which might be considered as the equivalent to the internalization of negative externalities referred to by Jullien and Lefouili) might be superseded by a positive appropriability and synergies effect, which might render a merger overall beneficial to innovation.

Motta and Tarantino, other than Jullien and Lefouili, do not find that relaxed competition, as a result of the merger, will increase the merged entity’s anticipation of higher profits, and will thus lead it to more vigorously invest in upcoming products³⁵. On the contrary, they argue that if a merger does not lead to significant cost savings to the merged entity, the latter will as a rule increase prices and cut on investments. However, Motta and Tarantino do not denounce the possibility of a merger’s overall positive effect of innovation, provided that it comes with a significant degree of efficiency allocations.

In all, it is safe to conclude that when considering the effects of a merger on the incentives to innovate, the majority of the relevant literature does not suggest a monodimensional approach. Rather, the leading message to be extracted is that, depending on the particularities of each market and each separate case, a merger between two firms competing in innovation might as well incentivise innovation efforts.

³⁴ *Supra* 29, p. 368

³⁵ Motta, M., Tarantino E., “The Effect of Horizontal Mergers, When Firms Compete in Prices and Investments” (2017), www.eief.it/files/2017/09/motta.pdf.

Mergers Between Non-Competing Firms

Although the above-cited theories on the relation between mergers and incentives to innovate might be to a greater or a lesser extent mutually contradicting, they all have one characteristic in common: all of them rely on the paradigm of a merger between firms competing on the same level. Indeed, those theories deal with the conventional considerations of competition harm revoked when two competing firms decide to merge. The sole difference from a conventional merger case in this paradigm is that the merging parties do not compete only on price cutting or product output, but also on innovation output.

There is, however, another way in which mergers in the broader sense and incentives to innovate correlate, which remains largely underexplored in literature. This refers to the paradigm of an acquisition of an innovation-based start-up by an incumbent firm. In their ground-breaking paper, Phillips and Zhdanov explore the relation between mergers of firms not competing on the same level of a product market, and innovation³⁶. They find that there is a well-defined business strategy of large firms to “buy” innovation from start-up companies, complementary to the R&D conducted by themselves. Their model is based on evidence compatible with Arrow’s theory, that in general larger firms manifest less incentives to engage in costly R&D programmes than a start-up, since them already holding a significant market share disincentivises them to engage in expensive, yet potentially unsuccessful innovation efforts. On the other hand, however, the profits an incumbent firm might anticipate from a successful innovation are substantially higher than those a start-up could achieve, as Jullien and Lefouili have noted³⁷, by expanding the Schumpeterian theory. Start-ups located in innovation-based markets, in turn, are literally driven by the incentive to successfully innovate, so as to attract the attention of some large firm of the market, which would possibly lead to their acquisition and, thus, to a lucrative exit for the entrepreneurs behind that start-up.

These conditions create an optimal innovation ecosystem: incumbent firms, although not being too eager to invest in R&D projects themselves, do have the interest to leave space for start-up firms to innovate. That way, incumbents may

³⁶ *Supra*, 7.

³⁷ *Supra*, 31.

acquire the successful innovative projects, reaping the fruits of the efforts of an efficient start-up, without having to bear the costs of unsuccessful projects. Start-ups, in turn, when located in a market with high acquisition activity, have strong incentives to develop innovative projects, which might have them showing up in the radars of some market giant, possibly ending up with the coveted acquisition. As long as this acquisition-powered cycle is sustained, the market at hand will grant sufficient incentives to new start-ups entering it and undertaking innovative efforts – an optimal outcome from an economic perspective.

However, this approach of a pacific cooperation between an innovation-based market's incumbents and new entrants, although unveiling an important, hitherto latent facet of such markets, does not deal with the other half of the truth. In fact, the application of Phillips and Zhdanov's model predisposes that the start-up's innovation efforts are aligned with a given incumbent firm's interests and business strategy. On the contrary, where a start-up turns these efforts to a direction that is contradicting the incumbent's interests, there we will have pure, offensive competition, albeit between different level players.

Bower and Christensen's seminal work propose a partition of the term "innovation", which is very useful in illustrating the above differentiation³⁸. They define between sustaining and disruptive innovation.

In the first case, minor improvements are applied to products already established in the market, in order to refresh them and maintain their appeal to costumers. Consider for example the smartphone industry; in an almost strictly programmed annual basis, each major firm will present a "highly innovative" new model, which aspires to "redefine the industry". Without intending to deny the technological progress achieved through sustaining innovation in the long run, the outcome of that annual innovation will most usually be a redefined version of last year's model, with slightly thinner bezels and a few extra software add-ons.

Disruptive innovations, on the other hand, do in fact have the potential to turn a market upside-down, refuting the status quo and redefining the market leaders, or even create a whole new market, with firms racing anew to take their position therein.

³⁸ Bower J.L., Christensen C.M., *"Disrupting Technologies: Catching the Wave"*, Harvard Business Review (1995), p. 43 – 53.

And it will, understandably, be the firm holding that disruptive innovation, which will have the head-start in this race. To remain in the mobile phone sector, consider for example the collapse of the cell-phone market as a result of the introduction of the smartphone, which created a whole new market, with new market leaders³⁹.

There is, rationally, an interest on behalf of incumbent firms in an innovation-based market, to opt for the pace of sustaining innovation. This way, a firm might maximize the value extracted from its products already established in the market, by extending their life-cycle, through applying minor optimizations at a regular pace, and putting efforts on marketing those as ground-breaking innovations. This strategy also offers minimum cannibalization of that firm's own profits, which would incur should a disruptive product be introduced in the market, and "prematurely" displace the currently marketed one.

In regard to sustaining innovation, Phillip and Zhdanov's model might in fact be relevant; Incumbent firms may actually have an interest to acquire such type of innovation from market entrants, in order to apply and utilize it in the context of competition with their level-playing competitors. However, when the discussion is about the more aggressive counterpart of innovation, i.e. the disruptive one, which is not being developed as a good to be sold to an incumbent firm, but which has the potential to provoke a turmoil in a particular market, the conclusions might be quite different.

Interests of Incumbent Firms vis-à-vis Disruptive Innovation

If we try to decompose and simplify the interests of an incumbent firm, when opposed with a disruptive innovation about to enter the market where the former is competing, we will find that these interests will basically be two. The first one would be to avoid this innovation being used against itself in competition, by depriving its competitors from gaining access to it (interest A.). The second interest would be for that firm to deploy itself that innovation against its competitors, by further developing and ultimately launching it into the market (interest B.). The goal, as always, is to capture a larger market share and thereby increase profits.

³⁹ *Smartphones to overtake traditional cell phones, become the new 'standard'*: https://www.nj.com/business/index.ssf/2011/09/smartphones_overtake_feature_p.html

Interest A. will generally be ever-present in such a case. Indeed, an incumbent firm, when realizing that a new idea, potent of disrupting the status quo of the market is about to spawn, being uncertain about the possible outcome in case that idea should fall into the hands of a competitor, will naturally have an interest to acquire it first, so as to assure that it is not going to be deployed against itself. This interest is compatible with Schumpeter's view⁴⁰, that a dominant firm's competitors in an innovative market will seek to overthrow that dominant through innovation, so as to take its position on top of the market hierarchy. The dominant firm will insofar have a counter-interest to keep game-changing innovations away from its competitors. Interest B., however, is subject to the firm's incentives to take on innovation efforts post-merger, as illustrated by the relevant theories cited above.

This situation automatically leads to the problematic occurring when on the one hand a firm has the incentives to acquire a potential market disruptor, to avoid competition through the latter's innovation, but on the other hand that firm already holds a more or less dominant position in the market, so that the commercialization of that innovation is not to its interests.

If Arrow was right in that an incumbent firm already holding a sufficient market share will lack incentives to innovate, for fear of cannibalizing its own profits through that innovation, then we might as well take that theory another step further: the firm of Arrow's model, which lacks interest to innovate itself, will by inference most probably have an interest to also actively dump incoming disruptive innovation by third parties for the same reasons⁴¹. Put differently, the passive disincentive of a market leader to innovate itself, might also imply an interest to actively harness third-party innovation entering the relevant market. That is, any market leader will by definition have an interest to acquire potentially threatening innovators, to avoid the fulfilment of Schumpeter's creative destruction theory⁴², and see itself succumbing to its competitors. According to Arrow's model, however, that market leader will also lack interest to launch that acquired innovation into the market, since it would probably only cut off profits from its already established products.

⁴⁰ *Supra* 23.

⁴¹ Gilbert R. J., Newbery D.M.G., "Preemptive Patenting and the Persistence of Monopoly," *American Economic Review* (1982), 72 (3), p. 514 - 526.

⁴² *Supra* 23.

Insofar, in a combination of Schumpeter's and Arrow's theories, we can suggest that an incumbent firm in an innovation-based market, already enjoying a sufficient market share, might vis-à-vis a disruptive innovation that is about to enter its market, have the incentives to acquire that innovation only to mute it ever after. This of course leads to a practice which raises serious competition concerns, as the overall result, stripped from incentives and interests, is a dominant firm actively acquiring maverick firms in order to dump disruptive innovations about to enter the market, and thus secure its dominant position.

Empirical Evidence

In maybe the first attempt to thoroughly examine the practice described above, Cunningham et al⁴³. provide valuable empirical evidence that “killer acquisitions”, as they name them, is in fact an acquisition strategy followed by innovation-based markets' incumbents. In order to do so, they wisely focus on the pharmaceutical industry, which offers various safeguards to allow the drawing of firm conclusions. Besides providing more articulated and long-standing evidence as for example the much more recent high-tech markets, the pharmaceutical market allows for a more detailed tracking of the process of an innovative project throughout the course of sequential acquisitions, due to the various standardized phases the development of a drug must undergo. Furthermore, this market offers easy detection of the overlapping between the acquired innovation and the acquirer's already established products, through universal drug type categorization, which overlapping would justify the latter's cannibalization-driven incentive to shut the acquired innovation down.

Astonishingly, Cunningham et al. find that innovative projects acquired by an incumbent firm which already holds a product overlapping with that innovation, are about 39,6 % less likely to further develop post-acquisition, than a similar project not acquired by a firm driven by the cannibalization disincentive⁴⁴. In aggregate numbers, they find that about 6,4% of every acquisition in their sample had the characteristics of a killer acquisition. This would translate to the suppression of a potential growth of about 5% in that industry's project development, by that practice alone – a remarkable

⁴³ *Supra* 12.

⁴⁴ *Supra* 12, p. 3

fact to have remained unnoticed so far. Furthermore, Cunningham et al. notice that the weaker the competition in a market, the more intense the effects of that practice will be, as the incumbent's disincentives to innovate⁴⁵, compliantly with Arrow's view, will further decrease, as its market share increases.

In light of the above, we might conclude that there is currently an anticompetitive acquisition strategy being deployed by incumbents in innovation-based markets, which remains largely underexplored in literature, not to mention policy. This strategy focuses on preemptively dumping competition, which would occur by the introduction of new ideas and technologies to the markets, to the dismay of consumers and the economy's competitiveness. At the same time, this practice remains largely unnoticed by competition authorities, since especially EU's merger control scheme was designed with the paradigm of mergers resulting in product market concentration in mind, and does therefore not dispose of sufficient mechanisms to scrutinize mergers between non-level playing firms. Given the significance of innovation promotion, mainly through the incentivization of start-up proliferation, to the EU's policy, as well as the adverse effects the practice of killer acquisitions might cast on those political interests, it is probably high time the Commission sets an eye on this issue.

⁴⁵ *Ibid.*

3. Merger Control in the EU – Capability to Deal with Innovation-Based Start-up Acquisitions

The political interest to protect innovation from anticompetitive conduct has been pointed out in the first chapter. The EU puts too much effort and funding into promoting innovation, to have it sacrificed for the sake of a firm's profits. Furthermore, there is maybe not yet widespread, but in any case, increasing attention drawn upon the detrimental practice of innovation-dumping acquisitions in theory⁴⁶, as well as in policy papers⁴⁷. Insofar, it can be sustained that there is a political interest on behalf of competition authorities to intervene in order to encounter such conduct. There is also no debate on whether this type of behavior would be best controlled through merger control, rather than for example through Art. 102 TFEU. In fact, the objective is to allow assessment of the detrimental effects of a merger on innovation, and impose corrective remedies, whereas the threat of merely an ex post imposition of a fine might not be that compelling to the incumbent of our paradigm after all, when its market position is at stake.

In the remainder of this section I will examine whether the current model of merger control in the EU is fit to cope with the practice of innovation-dumping acquisitions. Lending from the more general discussion on compatibility of Regulation EC 139/2004 with mergers in the digital market, I will then point out what (reluctant) steps have been taken towards an adaption of that model to innovation-based mergers. Thereafter, the role of innovation considerations in the practice of EU merger control is examined.

Regulation EC 139/2004 – Objectives and Limitations

Let us have a brief flashback to year 2004. Google LLC is a privately held company, belonging as much as a web search engine, which is preparing its IPO. In the corridors of Harvard University there is small-talk about *TheFacebook*, a newly

⁴⁶ Caffarra C., Latham O., „*Is Antitrust in Need of Disruption: What is Disruptive Innovation and What, if Anything, does Competition Policy Need to Do to React to It?*“, *The New Frontiers of Innovation and Competition*, Vol. II N. 1 (2018).

⁴⁷ OECD – „*Disruptive Innovation and Competition Policy Enforcement*“, DAF/COMP/GF(2015)7

launched social interaction web platform, offered only to the students of that university. Until 2018 Facebook Inc. will have engaged in 76 acquisitions of other companies⁴⁸. Google, on the other hand (or its holding company, Alphabet Inc.), will acquire 232 other firms until early 2019⁴⁹. Both firms will strategically acquire targets with innovation potentials and use them as leverage, in order to become worldwide technology giants.

Economy has changed significantly since Regulation EC 139/2004 (thereinafter “the Regulation”) has entered into force. In digital economy, especially, one of the main playing grounds for innovation, the development has been so rapid and the changes in the market so vehement, that not even the most insightful legislator could have foreseen. And economic development will sooner or later reveal a need for adjustment of the legislation it is framed by.

There has been in fact recent discussion whether the Regulation should undergo some refurbishment, in order to keep pace with recent developments in the digital markets, with the main escalator of this debate probably being the *Facebook / WhatsApp* merger case⁵⁰.

As per its objectives, the Regulation is rather comprehensive in regard to the scope of the mergers being contemplated. In fact, it is mandated in its Recitals that the Regulation shall grant control of *all* concentrations, in the light of their potential effect on competition in the single market⁵¹. Furthermore, the Regulation itself declares “*any* concentration which would significantly impede effective competition”, which it finds to be the case in the creation or strengthening of a dominant position⁵² as inadmissible to the single market⁵³.

Such an impediment to competition, according to Recital 8 of the Regulation, might be identified in significant changes in the structure of a market, which may affect that market in a Community level. If Recital 8 is to be interpreted more broadly, a significant harm to competition might as well be prevalent in case of an *obstruction*

⁴⁸ Data available at: https://www.crunchbase.com/organization/facebook/acquisitions/acquisitions_list#section-acquisitions.

⁴⁹ Data available at: https://www.crunchbase.com/search/acquisitions/field/organizations/num_acquisitions/google.

⁵⁰ Case No COMP/M.7217 - FACEBOOK/ WHATSAPP

⁵¹ Reg. EC 139/2004, Rec. 24

⁵² *Ibid*, Rec. 26

⁵³ *Ibid*, Rec. 25

of structural changes in the market, i.e. disruptions in that market, which could result in added consumer welfare and economy competitiveness.

After all, the fostering of innovation as an objective of merger control policy is not only enshrined in the Regulation itself⁵⁴, but also in the Horizontal Merger Guidelines⁵⁵, which complement the former. In fact, the Horizontal Merger Guidelines draw particular attention in cases where one of the merging parties is a significant innovator or a potential market disruptor, whose significance is however not - yet – translated into the equivalent market shares⁵⁶. Insofar, it seems that the ratio of the Regulation fully justifies intervention in cases of innovation-dumping acquisitions.

However, that ratio of the Regulation is compromised by its own limitations. Inevitably, in order to assess which concentrations will cause competition considerations in an EU-level, and in order to limit its scope of application thereon, the Regulation has to apply a test. This test takes the form of a legal presumption: a merger, the parties of which will meet the quantitative turnover thresholds set out in Art. 1, will by inference raise sufficient considerations in an EU-dimension and must therefore be notified to, and assessed by the Commission.

This means that, in order to fall into the scope of the Regulation, *both* -or at least two of- the merging parties will have to signal a significant size, that size being understood in terms of revenues alone. In fact, the conception that harm to competition is an equation dependent only to the product market structure and the merging parties' size in terms of revenues is widespread throughout the Regulation⁵⁷. However, as far as innovation considerations do in fact matter in the current EU merger control model, and given the fact that, as has been extensively illustrated in Chapter 2, the link between market concentration and innovation is rather vague, it is questionable whether the preached objective of controlling mergers in the light of harm to innovation is duly being served by the current structure-centric approach of the Regulation.

To put it differently, according to the presumption of the Regulation, only mergers between at least two firms with significant turnovers, that will most probably

⁵⁴ *Ibid*, Art. 2.1(b)

⁵⁵ *Supra* 11, para. 8

⁵⁶ *Ibid*, para. 20(b)(d), 38, 42

⁵⁷ Reg. (EC) 139/2004, Rec. 9, 20, 32

also be competitors in a given product market, may raise competition concerns in an EU-dimension and trigger control through the turnover thresholds. Accordingly, *any* concentration that will virtually raise such concerns, but will not overlap with the above paradigm, will most probably remain uncontrolled by the Commission.

This clearly demonstrates a blind spot of the Regulation, where the merging parties are in fact of current or potential significance, but in a way that does not reflect on their revenues and market shares yet. A potential of disrupting a market through innovation, to the benefit of consumers and overall economy, might be one way in which a merging party might be significant in an EU-dimension, and the EU seems to acknowledge that⁵⁸. However, the Regulation would still close its eye to that firm's acquisition by a market incumbent.

There is insofar an internal contradiction in the Regulation, in regard to what the Regulation seeks to achieve, and what it is potent of achieving. This contradiction and the subsequent blind spot of the Regulation was irreversibly exposed by the *Facebook / WhatsApp* case.

The Facebook / WhatsApp Merger Case

The acquisition of WhatsApp by Facebook⁵⁹ would not at all fall into the category of an innovation-dumping acquisition; neither was the driving force of that acquisition WhatsApp's innovative projects, nor was the latter shut down post-merger. It is, however, the most perfectly illustrated demonstration that in the digital age not all mergers potent of raising competition concerns will consist of firms with significant revenues.

Facebook, on its behalf, needs no introduction. Being one of the "big four" tech companies, it would surpass the Regulation's turnover thresholds anytime. WhatsApp, on the other hand, although being at that time one of the global leaders in the market for consumers communication services, its customer base merely reflected on its actual revenues, since the firm followed a little-to-no fee strategy. The reason Facebook was so eager to spend USD 19 bn. on acquiring WhatsApp was presumably

⁵⁸ *Supra*, 56.

⁵⁹ *Supra*, 50.

the latter's gigantic user database, which Facebook could monetize through the other services it provided, i.a. online advertising services⁶⁰.

So, simply put, in this case there was a merger between two global giants of the digital market, a transaction price close to the GDP of Cyprus that year⁶¹, and the personal data of millions of Europeans switching hands overnight. Yet that concentration was not deemed to have a Community dimension, as per the Regulation's presumption, and the thresholds of Art. 1.2. and 1.3. thereof.

Attempts to Fill the Administrative Gap

The advent of the *Facebook / WhatsApp* case has launched a vigorous discussion on whether the model of the Regulation was fit to cope with issues innate to the digital economy. If a concentration with such a magnitude could slip away without triggering notification through the turnover thresholds, then one could only imagine how many potentially concerning mergers remain uncontrolled.

The significance of that case to the dynamics created thereupon in regard to refurbishing the current merger control model is beyond doubt; few months before clearance had been granted to that merger, the Commission released a White Paper titled "Towards more effective EU merger control"⁶². The purpose of this paper was to give report on the first 10 years of the Regulation's application, and to propose measures aimed to increase efficiency for the future. In this elaborate work, there is but a mere paragraph referring to the Regulation's effectiveness in promoting innovation through the past 10 years⁶³; Besides that, there is no hint at all on the challenges the digital economy brings to the Regulation's market structure-centric model.

However, in October 2016 the Commission would launch a public consultation on the "evaluation of procedural and jurisdictional aspects of EU merger control"⁶⁴. Stakeholders in the two most innovation dependent markets, the pharmaceutical industry and the digital market, were invited to comment on the sufficiency of the

⁶⁰ *Ibid*, p. 29.

⁶¹ Data available at: <https://tradingeconomics.com/cyprus/gdp>.

⁶² White Paper, „Towards more effective EU merger control“, COM(2014) 449 final.

⁶³ *Ibid*, p. 6.

⁶⁴ Information at: http://ec.europa.eu/competition/consultations/2016_merger_control/index_en.html.

current turnover-based threshold model. It started to become prevalent, that the EU had second thoughts about the Regulation's capacity to deal with innovation-based considerations.

These thoughts were put into words in the most formal way, that is by the Commissioner for Competition, Margrethe Vestager, in her speech of March 10th, 2016 to the "Studienvereinigung Kartellrecht", a German lawyer association for competition law⁶⁵. In that speech, M. Vestager pointed out:

"To be sure we can intervene when it matters, we also need to know that our rules can cope with new ways of doing business".

In this speech, the Commissioner acknowledges that potentially concerning mergers are not always caught by the turnover thresholds. She even identifies this issue predominantly in cases where a to-be-acquired firm owns pipeline or developing products ready to be launched to the market, or when it has increased value in terms of innovation efforts – the perfect targets for killer acquisitions.

In fact, M. Vestager, in what has been interpreted as a hint of an upcoming revision of the Regulation⁶⁶, also referred in that speech to a certain threshold, namely the transaction value threshold, as a likely supplement to the existing turnover-based criteria. However, the Commissioner called on discussion and elaboration first, in order to crystallize the objectives and the direction of a future reform. Particular emphasis is also put on the balances that have to be contemplated in case of a revision of the Regulation. The ideal merger control model will be the one that picks out the concentrations that are potentially concerning, while not putting too much of a burden on the vast majority of the admissible transactions, which could backfire on the interests of the EU to incentivize the sprouting of innovative startups⁶⁷. This balance is particularly relevant also in the case of a transaction value threshold, i.e. in deciding

⁶⁵ Vestager M., *Refining the EU merger control*, Speech to Studienvereinigung Kartellrecht, Brussels, 10 March 2016, available at: https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/refining-eu-merger-control-system_en.

⁶⁶ Bushell G., „EU Merger Regulation Reform: No Smiles from the Threshold”, (2016), available at: <http://competitionlawblog.kluwercompetitionlaw.com/2016/10/24/no-smiles-from-the-threshold-eu-merger-control-reform/>.

⁶⁷ *Supra*, 65.

which acquisition price will indicate a potential competition impeding merger, and on what grounds such a merger will be controlled, once notified.

The Transaction Value Threshold

The speech of the Commissioner for Competition before the German audience came at a remarkable timing; few months later, on the 1st of July 2016 the German Federal Ministry of Economics would propose the introduction of a transaction value threshold, as part of a comprehensive revision of its “*Gesetz gegen Wettbewerbsbeschränkungen*” (GWB), the Act against Restraints to Competition. The initial proposal was for a notification of an intended merger to be triggered if the transaction price would exceed € 350 million, whereas the aggregate worldwide turnover of the merging parties would exceed € 500 million, the one party (usually the acquirer) would have more than € 25 million turnover in Germany, and the other party (presumably the acquired) would be active, or would *presumably* be active within that country⁶⁸. The threshold purposely left the target’s turnovers out of the equation, so as to include to its scope mergers whose significance is not reflected on all of their parties’ financial soundness. After a round of public consultation and some lobbying on behalf of the digital market representatives⁶⁹, the final form of the 9. amendment of the GWB passed the Bundestag and entered into force on 9. June 2017. The transaction value threshold was eventually set on € 400 million, and the target of the acquisition has to be active in Germany to “a considerable extent”⁷⁰.

Few months later, on the 1st of November 2017, the Austrian law introducing a transaction price threshold of € 200 million would enter into force⁷¹. On July 2018, the two countries’ competition authorities would also publish common guidelines on the application of their respective transaction value thresholds.

⁶⁸ Berg W., *Germany Proposes Transaction Value Threshold to Require Notification of High Value Deals Even with No/De Minimis Sales in Germany*, (2016), available at: <http://competitionlawblog.kluwercompetitionlaw.com/2016/07/22/germany-proposes-transaction-value-threshold-to-require-notification-of-high-value-deals-even-with-node-minimis-sales-in-germany/>.

⁶⁹ Bitkom – „*Stellungnahme – Entwurf eines Neunten Gesetzes zur Änderung des Gesetzes gegen Wettbewerbsbeschränkungen*“, 25.08.2016.

⁷⁰ § 35 GWB.

⁷¹ Mayr M., *„Austria to introduce Transaction Value Merger Notification Threshold*”, (2017), available at: <http://competitionlawblog.kluwercompetitionlaw.com/2017/04/10/austria-to-introduce-transaction-value-merger-notification-threshold/>.

Germany, in particular, has been very explicit in explaining the motives behind introducing a transaction value threshold. In the substantiation of the 9. GWB amendment, it is expressly mentioned that under a scheme which is merely turnover-based, concentrations in the digital market between large incumbents and innovative startups with a macroeconomic significance remain uncontrolled⁷². The then proposed revision of the GWB insofar aspired to readjust the German merger control scheme, to fit in the digital age. Taking it a step further, a newly published report⁷³ for the German Federal Ministry for Economic Affairs proposes a supplementation of § 36 para. 1 GWB, which provides for the principles in assessing a merger, in order to provide the competition authority with an explicit mandate to control acquisitions of innovative startups in the light of a possible existence of a strategy on behalf of the acquirer to preempt future competition through such conduct.

The recent dynamics observed in Germany and Austria undoubtedly demonstrate a shift towards competition considerations that are dispatched from current market-power conceptions alone and are more adapted to problematics innate to the innovation-based markets. These dynamics might, in fact, soon also affect the view of the EU on the relevant issues, as hinted by M. Vestager⁷⁴. However, the transaction value threshold should in no case be conceived as a panacea to concerns related to innovation-based mergers. Besides the technical issues, which have been identified early on, such as for example the height of the transaction value to be considered, or the difficulty to identify in each case the exact amount of the transaction price, there are more profound problems in the application of such a threshold.

One issue would be that a transaction value threshold would possibly only set the limit, just below which killer acquisitions would take place. Literature from the US, where such a threshold is being applied, points this phenomenon out⁷⁵. Indeed, since from the perspective of an entrepreneur an acquisition by a market incumbent is

⁷² Deutscher Bundestag – *Gesetzentwurf der Bundesregierung*, Drucksache 18/10207.

⁷³ Schweitzer H., Haucap J., Kerber W., Welker R., „*Modernising the law on abuse of market power*“, available at: https://www.bmwi.de/Redaktion/DE/Downloads/Studien/modernisierung-der-missbrauchsaufsicht-fuer-marktmaechtige-unternehmen-zusammenfassung-englisch.pdf?__blob=publicationFile&v=3

⁷⁴ *Supra*, 65.

⁷⁵ *Supra*, 12.

possibly the most preferred form of exit⁷⁶, selling just below the trigger might still be a lucrative decision. If the transaction price threshold would be set at a lower value, market incumbents would only have to bear the task of identifying potential disruptors at an earlier stage of their development, acquiring them at a lower price. Declination of such an offer on behalf of the start-up would not be in fact very likely; knowing that any other incumbent would possibly not make a better offer, in fear of triggering notification, and facing the danger of decreased funding by venture capitals due to decreased exit possibilities, which would lead the whole innovative project to failure, the entrepreneur would most likely succumb. After all, at an early stage of its development, a start-up will not hold too much bargaining power really.

However, the most fundamental issue is that the transaction value threshold seeks to answer only half the problematic tied to acquisitions of innovation-based mergers. It only provides for a mechanism that allows triggering of notification abstract from market structure-centric considerations, and more adapted to the reality of innovation-based markets, where a firm's market significance does not always come with market shares and/or revenues. What it does not answer (and does not seek to answer either), is on what grounds the assessment of such a concentration, once notified, will be conducted. The transaction value threshold, just as its turnover-based cousin, is static in its nature; what it can contemplate is what happens here and now, whereas considerations connected to competition in innovation are highly dynamic and forward-looking. Assessing what the driving force and the motivations behind the acquisition of an innovative start-up by a market incumbent is requires a great amount of speculation on behalf of the competition authority, and reliance on the theories on competition and innovation, which, as has been pointed out, do not provide clear-cut guidance.

⁷⁶ *Supra*, 13.

The Role of Innovation-Considerations in Current EU-Merger Control Practice

As it has already been pointed out, and as it is enshrined throughout the Regulation⁷⁷, the model of merger control in the EU orbits primarily around the effects of a merger on market structure. What is assessed are the quantitative elements of a concentration. Insofar, the pivotal question a merger control in the EU seeks to answer, is whether the concentration at hand will strengthen the merged entity's market power.

At the same time, the model of merger control in the EU is static in its nature. It contemplates only the immediate effects of a merger to the merged entity's market power. It does so by comparing two static pictures, namely the relevant market structure right before and right after the merger has been conducted.

So how does the Commission assess a concentration against the background of its non-immediate effects, that is the unilateral effects such as increase in prices, decrease in product output, or incentives to innovate? The answer is by proxy of such market power⁷⁸. As a matter of fact, the practice of EU merger control at its core rests on the presumption that a concentrated market will as a rule cause adverse effects to competition.

For instance, in a conventional case where two firms compete for lower prices, the Commission would by inference conclude that a merger between those two firms, which would lead to the strengthening of the merged entity's market power, would presumably increase prices in that given market, and thus harm competition. In that light, in order to justify intervention, the Commission would only have to prove a "significant impediment to effective competition" in form of strengthening of market power, as the result of that concentration. The subsequent adverse effects to competition are merely presumed and must not be substantiated on behalf of the Commission. The unpleasant task to prove an overall non-detrimental effect of that concentration to competition is left to the interested parties.

⁷⁷ Regulation (EC) 139/2004, Rec. 9, 20, 32.

⁷⁸ Ibáñez Colomo, P. "Restrictions on innovation in EU competition law", *European Law Review*, 41 (2), (2016). pp. 201-219.

This approach, which has been described as the “contemporary enforcement” model⁷⁹, is well illustrated in ECJ’s decision *Ryanair Holdings plc v Commission*⁸⁰. Ryanair’s intended acquisition of Aer Lingus was prevented by the Commission⁸¹, on the grounds that the concentration would lead to a strengthening of the acquirer’s market power, which would in turn cause adverse effects to consumers. Ryanair contented the Commission’s decision before the ECJ, not denying that the concentration would lead to a strengthening of its market power per se, but claiming that the harm to consumers which would result thereof was not sufficiently substantiated by the Commission. The ECJ rejected this claim, pointing out that the Commission’s view of harm to consumers was sufficiently justified by showing that the intended acquisition would alleviate the competitive constraints faced by Ryanair.

When faced with innovation concerns in the event of a notified merger, the logic of the Commission remains unaltered. In fact, it is officially upheld by the Commission that harm to innovation, as a consequence of a merger, is nothing but another unilateral effect, to be treated just as the menace of post-merger increase in prices or decrease in product output⁸². Insofar, when assessing a merger between two firms that compete for innovation, the Commission will in a similar manner content itself to conclude whether that merger will mute the negative externalities casted by the merging parties against each other prior to the concentration, through their respective innovation efforts. If that be the case, the merger will as a rule be presumed detrimental to competition, subject to contrary evidence of an overall efficiency of that concentration, brought by the interested parties in Phase II investigation. Again, harm to innovation is assessed indirectly, that is by presumption, whereas no direct detrimental effect to innovation must be substantiated by the Commission.

The application of the “contemporary enforcement” logic also in innovation-based mergers was justified by the ECJ in the *Deutsche Börse AG v. Commission* ruling⁸³. Deutsche Börse contented the Commission’s view that its acquisition of NYSE

⁷⁹ *Ibid.*

⁸⁰ *Ryanair Holdings plc v Commission* (T-342/07) (2010).

⁸¹ Case No COMP/M.4439 – Ryanair / Aer Lingus

⁸² European Commission – *Competition Policy Brief*, (2016), available at: http://ec.europa.eu/competition/publications/cpb/2016/2016_001_en.pdf.

⁸³ *Deutsche Börse AG v European Commission* (T-175/12) (2015)

Euronext would reduce innovation in the market at hand⁸⁴. As in its Ryanair ruling, the ECJ rejected the claim that findings of presumably reduced innovation rates post-merger were unsubstantiated. The Court reaffirmed the contemporary enforcement logic, by stating that it sufficed for the Commission to show a reduction of competitive constraints faced by the merged entity as a result of the concentration, in order to presume the negative effects thereof on innovation output.

The Commission followed suit with this ruling of the ECJ in the merger cases to come. In *Novartis / GSK's oncology business*⁸⁵, there were concerns that the notified merger would reduce the overall firms competing in a market for specific cancer treatments from three to two. It furthermore found that this decrease in competition levels would be likely to lead Novartis to abandon the development of two specific pipeline products, which were also overlapping with respective R&D projects of the acquired firm. The merger was eventually cleared, however subject to divestment of the particular developing products of Novartis.

In *GE / Alstom*⁸⁶, the notified merger would bring together the market leader and the firm positioned third in the worldwide market for heavy duty gas turbines, consisting of overall 4 players. Besides the adverse effects on post-merger prices and consumer choices, the Commission was concerned that the merger would lead to the discontinuation of Alstom's important innovation efforts, regarding in particular "GT36", a highly efficient turbine being developed at that time by that firm, which was about to enter the market. The Commission approved the merger, subject to divestitures regarding inter alia pipeline projects and R&D personnel of Alstom.

However, none of the preceding cases raised as much attention and controversy as *Dow / DuPont*⁸⁷. In this case, the Commission departed from the view that harm to innovation would manifest itself as the discontinuation of the merging firms' overlapping efforts to further develop already discernible pipeline products, for fear of cannibalization of post-merger profits. Instead, the Commission adopted a much broader conception of harm to innovation; by differentiating between product market competition and competition in "innovation spaces", the Commission

⁸⁴ Case No COMP/.6166 DEUTSCHE BÖRSE / NYSE EURONEXT

⁸⁵ Case No COMP/M.7275, 7276 - NOVARTIS/ GLAXOSMITHKLINE ONCOLOGY BUSINESS

⁸⁶ Case M.7278 - GENERAL ELECTRIC / ALSTOM

⁸⁷ CASE M.7932 – Dow/DuPont

presumed that the exit of one player out of overall four from such innovation spaces, would significantly alleviate competition constraints therein. As a result of concentration in the relevant innovation spaces, an overall harm to innovation in the long run, abstract from the product market competition, was presumed. By developing the criterion of a “significant impediment to effective *innovation* competition”, this case demonstrated perhaps the most straightforward application of the standard unilateral effects approach to innovation concerns.

This approach has given rise to a new innovation theory of harm; In line with Federico et al.⁸⁸, the Commission adopted through *Dow / DuPont* the view that, subject to robust evidence pointing to overall efficiencies, a merger between two firms competing for innovation will in a consistent manner leave post-merger innovation output worse off.

This most recent theory of the Commission vis-à-vis merger effects on innovation has been met with criticism. On the one hand, economic literature upheld the widely spread conception that the link between competition levels and innovation output are too vague to allow monosemantic conclusions, such as those drawn by the Commission in *Dow / DuPont*⁸⁹.

On the other hand, competition in innovation entails attributes that are intrinsically different than those met in price competition⁹⁰. Insofar, the direct application of the unilateral effects theory on innovation concerns entails a logical jump. Indeed, effects of a merger to innovation might not be as immediate and straightforward as the relevant effects in prices. Concerns in innovation competition are macroscopic and difficult to presume at the stage of notification. They belong to the sphere of consumer welfare and innovation *sustainability*. In fact, innovation dictates on which grounds future product market competition will take place. Insofar, innovation concerns are forward looking in their nature, in contrast to current or short-term price effects, to which the EU merger control model is adjusted.

⁸⁸ *Supra* 32.

⁸⁹ Denicolo V., Polo M., „*The Innovation Theory of Harm: An Appraisal*”, Bocconi, Working Paper N. 103, March 2018.

⁹⁰ Petit N., „*Significant Impediment to Industry Innovation: A Novel Harm in EU Merger Control?*”, ICLE Antitrust & Consumer Protection Research Program (2017).

Furthermore, price competition predisposes that the two firms at hand are in fact current competitors in a product market. This is, however, not always the case in innovation competition. The nascent attention drawn upon killer acquisitions highlights this matter. That is, concentrations between two firms that are neither both of significant size in terms of revenues, nor are they current competitors in a market, might as well cause a potentially significant impediment on efficient innovation competition.

4. Towards a More Dynamic Contemplation of Start-up Acquisitions

The objective to protect and promote innovation in the context of merger control is compromised by the two successive presumptions applied throughout the course of the procedure. First, there is the Regulation's presumption that the concentrations worth being controlled are only those which entail players of significant size. Next, there is the presumption applied in practice by the Commission, which dictates that harm to innovation might be predicted where a merger leads to alleviation of the competition faced by the merged entity. This approach filters killer acquisitions out of the scope of EU merger control; neither will the innovative start-ups demonstrate any significant size in terms of revenues, nor will that acquisition affect the current constraints faced by the acquirer, so that harm to innovation might be inferred.

Furthermore, this logic reflects a static contemplation of a merger's effect to innovation, whereas, as seen, innovation concerns are dynamic by nature.

Insofar, a prerequisite for a merger control setting to take acquisitions of innovation-based start-ups under the microscope, is the direct assessment of harm to innovation, as opposed to an assessment by inference, through the adoption of a dynamic and long-term envisagement of an acquisition's effect on innovation.

Implications in the Direct Assessment of Harm to Innovation

It has been pointed out in literature⁹¹ that the introduction of a direct evaluation of innovation harm is bound with certain difficulties, relating especially to how this harm is proven in practice, as well as how administrative discretion in intervention is confined, once such a harm is established.

Proving Direct Harm to Innovation

It is understandably impossible to define a tactile harm to innovation at the point of notification, i.e. before the merger has even taken place. The impossibility to directly prove harm to innovation at this point is what leads the current model to infer

⁹¹ *Supra* 78.

such harm through observable measurements after all. This implication could however be overcome by a dynamic contemplation of the effects of an acquisition to innovation, that is by abstraction of enforcement from the notification stage.

In October 2017 the wave of merger control adjustment to the digital era reached France. The French Competition Authority launched a public consultation in order to assess the adoption of measures targeted to modernize the French merger control model⁹². One of the main measures considered by the FCA was the implementation of a transaction value threshold, in order to cope with mergers potent of raising serious competition concerns, but which went uncontrolled through the existing turnover thresholds. In June 2018 the FCA finally announced the conclusions of this consultation. It deemed inter alia that the transaction value threshold was not fit to address those issues within the French economy. Instead, it opted for an ex-post assessment of potentially concerning mergers, which would fall short of the turnover thresholds.

By decoding that when inter alia innovation concerns are at stake, intervention must be abstracted from the stage of notification, the FCA indeed hit the bull's eye. That way, harm to innovation which appears in the long run might be proven directly at the time of its appearance, whereas it would be impossible to predict ex ante.

Arbitrariness in Administrative Intervention

Although the newly proposed French approach is in the right direction to effectively control innovation-based mergers in a dynamic and direct way, it remains to be seen how it will be integrated into the existing merger control system. As far as the ex-post control will be mandated solely as a guideline, there are serious concerns of administrative arbitrariness and legal uncertainty evoked. In fact, a setting where administration could intervene at any given time in the future, and on any grounds it would deem as harm to innovation, would tremendously afflict legal certainty in the market. This could lead to an overall reduction of acquisition activity in innovation-based markets, resulting in a chill of entrepreneurship due to reduced exit

⁹² Calvet H., Billard O., Fabre G., "France", in –"The Merger Control Review", Law Business Research Ltd (2018), Chapter 18, pp. 196 – 210.

possibilities⁹³. Insofar, it is a necessity that such a dynamic measure be integrated into a robust and predictable merger concentration scheme.

Assessment - Against which Background?

The topic of innovative start-up acquisition is one where policy has superseded literature. Whereas there are hints slowly but steadily showing up that policy acknowledges the concerns bound with that topic⁹⁴, it is still underexplored in literature.

Most notably, all the attention drawn upon this issue so far is limited to the question of *how* such a merger will be notified, in order to undergo control. Yet no attention is drawn upon the background against which that merger, once notified, will be controlled. This question is particularly prevalent, since in the case of a start-up acquisition the conventional competition concerns related to market concentration are not relevant.

According to the contemporary enforcement logic⁹⁵, the control would probably be conducted in light of concentration in “innovation spaces”. In this case, merger control would seek to avoid concentration of innovation efforts in a market, which would be presumed to harm overall innovation output.

However, in a dynamic merger control setting, a *presumption* of harm to innovation is not needed, since the harm per se might be perceived once manifested. In this light, the objective of a dynamic merger control scheme in innovation-based acquisitions should be to avoid harm to innovation *in concreto*, that is to avoid the dumping of the acquired firm’s innovative projects.

Insofar, the concentration-hostile stance of conventional merger control is irrelevant in acquisition of innovative start-ups. In this case it is the continuation of development of the acquired innovation, and eventually its commercialization by the acquirer that is at stake. Only then will consumers and the economy in whole benefit from that innovation at all.

⁹³ *Supra* 13.

⁹⁴ *Supra* 72.

⁹⁵ *Supra* 78.

There is, after all, wide acceptance in literature that a more concentrated market offers a better environment for innovation⁹⁶. In order to make this clearer, one should differentiate between *ability* and *incentives* to innovate. When it comes to ability, there is little doubt that the more powerful players are in a better position to effectively innovate, since possessing more versatile infrastructure and personnel, as well as the means to fund R&D efforts. The whole debate on the link between innovation and market concentration refers indeed to the extent to which this ability also comes with the respective incentive to innovate. But since the age of Charondas⁹⁷, legislation is being understood as a legitimate means to affect incentives.

A Dynamic Mechanism to Consider

In a dynamic merger control setting, tailored to acquisitions of innovative start-ups, there would still be a need for notification of the imminent merger. The notification thresholds should focus on the attributes of an innovation-dumping acquisition that might not be altered by the merging parties on the occasion of such notification (other than for example the net transaction price). The first main attribute of such an acquisition is that the acquiring party will usually be an incumbent dominant in a certain product market, with significantly above-average turnovers. The second attribute is that the acquired start-up will usually demonstrate a high R&D-spending to overall turnover relation. Another hint might be that the transaction value will significantly supersede the value of the acquired firm's tangible assets. Insofar, a combination of the above factors could serve as a safe proxy to have potential innovation-dumping acquisitions notified.

Following notification, a brief and simplified control of the intended acquisition would be conducted. The merging parties would be expected to disclose to the authority their overlapping R&D capabilities, as well as the current pipeline products under development. The acquirer would also be expected to brief the authority in regard to the strategic motivations behind the acquisition, as well as to provide a timeline for the further development and commercialization of the acquired pipeline

⁹⁶ *Supra* 23.

⁹⁷ Charondas (7th century BC) was a legislator in the Greek colonies of southern Italy, known for his creative laws, which incentivised citizens to lead a life according to the moral standards of his time.

projects. Should the authority be satisfied with the parties' declarations, and absent other, non-innovation related grounds for intervention, it would immediately clear the acquisition.

An ex-post control, in line with the proposed and accepted timeline would follow. Should there be non-justifiable deviations, which would hint to an innovation-dumping acquisition, the authority would be able to subject the relevant pipeline projects to divestment. If the discontinued project would in fact have the potential to disrupt the relevant market, the acquirer's competitors would most certainly be interested in acquiring it. If no interest would be expressed, it would be deemed that the discontinuation of the project's development lies on purely economic reasons, therefore no need for intervention would be apparent.

The adverse effect would be that the acquirer would ex ante not engage in an acquisition of a potentially disruptive start-up, only to dump its innovation efforts, if knowing that eventually its disruptive projects would fall into the hands of its competitors.

In that light, the most reasonable conduct of our paradigm's incumbent, given that it is driven by its interests A. and B., is to acquire the disruptive innovator and strive to further develop and eventually commercialize its innovative projects. That way, it would only risk to submit itself to some profit cannibalization, rather than to lose its market position to a competitor altogether.

In all, what this model achieves is to tie the acquirer's interest A. with its interest B., rendering the conduct of innovation-dumping acquisitions non-profitable. It also does so by leaving the entrepreneur out of equation, thus putting no constraints to the proliferation of innovation-generating start-ups.

Conclusion

There is an internal contradiction between the manifested political interests of the EU in regard to promotion of innovation and the role of innovation in EU competition policy. On the one hand, the Union perceives innovation generated by start-ups as a key-factor for consumer welfare and economic competitiveness. In this sense, it devotes significant amounts of funding and comprehensive policies to promote the proliferation of innovative start-ups. On the other hand, its merger control model is capable of activating intervention in only a fraction of mergers that raise significant innovation concerns.

The incapability of the current merger control model to take innovation-dumping acquisitions under the scope lies in its market structure-centric and static nature. It presumes harm to price competition and innovation competition alike, where the given merger will result in market concentration. However, innovation concerns share little attributes with price-effects. They are dynamic in their nature and observable in the long-term, and as such require a different contemplation.

Through this inability to efficiently protect its political interests through competition enforcement, the EU falls short of the mandate enshrined in Art. 173 TFEU: *to foster better exploitation of the industrial potential of policies of innovation, research and technological development.*

This thesis proposes a departure from the contemporary enforcement logic of conventional merger control when solely innovation concerns are at stake. Instead, it proposes a direct and dynamic contemplation of the effects of a merger to innovation. This proposal is of course in an embryonic stage, and requires further development.

The core question is whether the concerns raised in acquisitions of innovative start-ups are worth the effort to undertake such large-scale departures from the well-established current merger control logic. Hopefully this question has been answered in the first Chapter. After all, it is rather unlikely that the overall debate on adjusting the current merger control setting to the needs of the digital markets would have been ignited either, had it not been preceded by reality.

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