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Giulia Sonderegger

Killer Acquisitions in Digital Markets: An Analysis of the EU Merger Control Regime

Killer Acquisitions in Digital Markets: An Analysis of the EU Merger Control Regime

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vorgelegt von

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von Heiden AR

genehmigt auf Antrag von
Prof. Dr. Andreas Heinemann
und
Prof. Dr. Peter Georg Picht

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Zürich, den 06.12.2023

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List of Abbreviations

ACCC	Australian Competition and Consumer Commission
ACM	Association for Computing Machinery
AG	Advocate General
AI	artificial intelligence
AR	augmented reality
Art.	Article
BAT	Baidu, Alibaba and Tencent
BBVA	Banco Bilbao Vizcaya Argentaria
BEIS	UK Department for Business, Energy and Industrial Strategy
BRICS	Brazil, Russia, India, China, and South Africa
CEO	Chief Executive Officer
CERRE	Centre of Regulation in Europe
CRA	Charles River Associates
CLES	Centre for Law, Economics and Society
CMA	Competition and Market Authority in the UK
CNBC	Consumer News and Business Channel
CNET	Computer Network
Co.	Company
COM	Communication
Corp.	Corporation
CPI	Competition Policy International
CRESSE	Competition & Regulation European Summer School and Conference
D.D.C.	United States District Court for the District Columbia
DCF	Discounted Cash Flow Valuation
DG Comp	Directorate-General for Competition
DMA	Digital Markets Act
DoJ	Department of Justice
DVD	Digital Versatile Disks
E.U.	European Union

EEA	European Economic Area
EC	European Commission
ECA	European Court of Auditors
ECJ	European Court of Justice
ed.	editor
edn.	edition
eds.	editors
et al.	and others
et seq.	and what follows
EU	European Union
EUMR	European Merger Regulation
EY	Ernst and Young
fn.	footnote
Form CO	Official form for standard notifications
Form RS	Official form for reasoned submission pursuant to Art. 4(4) and (5) EUMR
FTC	US Federal Trade Commission
GAFAM	Google, Amazon, Facebook Apple and Microsoft
GDP	Gross Domestic Product
GE	General Electronic Company
GRUR	Gewerblicher Rechtsschutz und Urheber
GWB	Gesetz gegen Wettbewerbsbeschränkungen (German Competition Act)
HHI	Herfindahl-Hirschman-Index
HM	His Majesty's
ibid	in the same source
IBM	International Business Machines Corporation
ICT	information and communications technology
IP	intellectual property
IPO	initial public offering
Inc.	Incorporation
IT	information technology
M&A	mergers and acquisitions

MEI	Merger Enforcement Intensity
MIS	Management Information Systems
MIT	Massachusetts Institute of Technology
N.D.Cal.	United States District Court for the Northern District of California
NBER	National Bureau of National Research
NGS	Next-generation sequencing
No.	number
OECD	Organization for Economic Co-operation and Development
OFT	Office of Fair Trading
OJ	Official Journal
para.	paragraph
paras.	paragraphs
PwC	PricewaterhouseCoopers
R&D	Research and development
RSC	Robert Schuhman Center
SAIL	Stanford Artificial Intelligence Laboratory
SEC	United States Securities and Exchange Commission
SIEC	Substantial Impediment of Effective Competition
SLC	Substantial Lessening of Competition
SME	Small and medium-sized company
SSNIP	Small but Significant Non-Transitory Increase in Price
SSNDQ	Small but Significant Non-Transitory Decrease in Quality
SSRN	Social Science Research Network
SVB	Silicon Valley Bank
SWD	Staff Working Document
TEU	Consolidated version of the Treaty on the European Union
TFEU	Consolidated version of the Treaty on the Functioning of the European Union
TTBER	Technology Transfer Block Exemption Regulation
U.S.	United States (of America)
UK	United Kingdom
US	United States (of America)

VC	Venture Capital
v	versus
vs.	versus

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Introduction

Relevance of the Topic

With the dot.com boom at the end of the 1990s, the term ‘start-up’¹ has become a buzzword embodying progress, innovation and disruption. Indeed, the pace at which technology develops is unprecedented. Whilst a particular technology may be viewed as ground-breaking today, it is likely to be considered old within a few years. Start-ups play an essential role in boosting these rapidly evolving innovation cycles as they continuously fuel markets with all kinds of entrepreneurial ideas and disruptive technologies, thereby constantly challenging existing market boundaries and prevailing power structures. From a competition and innovation point of view, they are invaluable sources to keep incumbents on their toes, forcing them to incessantly improve their products and services whilst ensuring that inefficient companies exit the market. Hence, it is a significant concern of competition authorities across the globe to create a legal framework that allows start-ups to enjoy a level playing field and flourish independently.

One field where nascent firms have recently drawn particular attention from the competition community is merger control. This is because, over the last few years, they have increasingly become the target of incumbents’ acquisition strategies. By fostering creativity and innovation, nascent firms can constitute viable threats to incumbents’ market positions. Consequently, established technology companies have a strategic interest in controlling these companies’ innovations, especially if they hold the potential to develop into a rival one day or disrupt existing market structures. The fact that, over the last ten years, an increase in mergers of about 40% could be witnessed in the EU reflects this interest emblematically.² Moreover, as shown in the market study led by the US Federal Trade Commission, between 2010 and 2019, the big technology firms Alphabet (Google’s parent company), Apple, Meta (Facebook’s parent company), Amazon and Microsoft—more commonly referred to as GAFAM—have acquired 616 companies worth at least \$1 million each. Thereby, the Commission found that out of these 616 transactions, 65% exhibited very low value ranging between \$1 million and \$25 million,³ which clearly

¹ Within this thesis, the terms start-up and nascent companies will be used as synonyms.

² ECA Special Report, 14.

³ FTC Study, 13.

demonstrates the big technologies companies' interest in buying small firms. These acquisition trends have generally led competition authorities across the world to reconsider start-ups' role in strengthening existing power structures.

In this context, a lot of attention has been paid to so-called 'killer acquisitions'. In their original meaning, they describe acquisitions of nascent companies by incumbent firms that aim at killing a potential competitor's innovation activities at an early stage to prevent the cannibalisation of the incumbent firm's own sales and revenues, thus pre-empting competition. The term was first coined in the influential seminal paper by Cunningham, Ederer and Ma,⁴ finding that approximately 6.4% of all acquisitions constitute such harmful transactions in the pharmaceutical industry.⁵ As the debate expanded to digital markets, the concept of killer acquisitions has increasingly started to be understood in a much broader sense to describe transactions whereby incumbents buy nascent companies to either integrate the innovation activities into an existing product or service or, more broadly, to gobble them up into their ecosystem in order to remove potential future threats which may have arisen in the absence of the acquisition.⁶

One of the main reasons for this broader understanding of killer acquisitions in digital markets is that unlike in the pharmaceutical industry, competition takes place for the market rather than in the market, meaning that nascent firms commonly compete for rents that flow from a new, uncolonised market to prevent existing large incumbents from exerting market power.⁷ Hence, firms that aim to stand a chance against incumbents typically enter fringe markets from where they can move upmarket in order to eventually attract incumbents' mainstream customers. This peculiarity of digital markets also affects the main rationale behind killer acquisitions taking place in such markets: they are primarily used to control nascent companies' innovation activities in order to pre-empt potentially competitive or disruptive threats at an early stage. Given that, at the moment of the transaction, the start-up concerned is typically not (yet) active in the same market as the incumbent, the acquirer may, however, generally be less incentivised to terminate the nascent innovation than in pharmaceutical markets, where killer acquisitions are usually applied "when the incumbent's drug is far from patent expiration" in order to avoid

⁴ Cunningham, Ederer and Ma, 649–702.

⁵ *ibid*, 655.

⁶ See, for instance, Pérez de Lamo, 51; Turgot, 112; Yun, 653; Petit 225; Caffarra, Crawford and Valletti, 14.

⁷ Lear Report, i.

the loss from cannibalisation.⁸ Accordingly, killer acquisitions in digital markets are commonly used to keep in check the innovation activities of nascent firms that could endanger their value chain in the future. In this spirit, incumbents often pursue the strategy that “it’s better to buy than compete”.⁹

Such acquisition strategies can raise major competition concerns. For instance, they can lead to a reduction of potential future competition and disruption, which, in the absence of the transaction, could have greatly benefitted society by increasing the range of choice and the quality of the product or service in question. Moreover, killer acquisitions in digital markets enable large incumbents to influence the development of emerging markets in a way that favours them the most but does not necessarily meet social interests. They can also allow large technology companies to get hold of valuable data and expand their existing user bases, thus further cementing their market position whilst increasing their profit margins and raising barriers to entry for potential new entrants. Therefore, combined with the specific features of digital markets, which already foster concentration, killer acquisitions may generally lower competition and stifle innovation.

Based on these observations, the overarching aim of this thesis is to assess whether the current EU merger control framework can tackle killer acquisitions in digital markets and, depending on the findings, make suggestions that could render it more effective in the future.

Research Question

As mentioned above, this thesis aims to assess killer acquisitions in digital markets in light of the EU merger control regime. To this end, it seeks to answer the following main research question:

Provided that killer acquisitions are harmful, is the current EU Merger Control Regulation (EUMR) appropriate to tackle killer acquisitions occurring in digital markets, and if not, in what ways does it need to be amended to better address the challenges in the future?

Given that this research question is very broad, this thesis will break it down into the following four sub-questions:

⁸ Cunningham, Ederer and Ma, 653.

⁹ This sentence was discovered by the FTC in an e-mail from Mark Zuckerberg, *FTC v Facebook Inc.*, Case No. 1:20-cv-03590-JEB (D.D.C. 2021), para. 5.

- i. What are 'killer acquisitions' in the digital context, and what makes digital markets so special in connection with such acquisitions?
- ii. Do killer acquisitions harm competition, and if so, how?
- iii. What are the main challenges that killer acquisitions pose to the current EUMR?
- iv. How does the EU tackle these challenges, and how would the existing EU merger control framework need to be amended to better address killer acquisitions in the future?

The structure of this thesis will follow these four sub-questions.

Structure of the Thesis

To address the aforementioned sub-questions, [Part I](#) of this thesis will first define the most important terms. Thereafter, it will introduce the reader to the features of digital markets and discuss the barriers to entry prevailing in such markets, which is crucial to create a better understanding of why the protection of start-ups plays such an important role in digital markets. Finally, it will present the main functioning of merger control, including a section on how the European merger control regime has evolved over the last decades. Overall, Part I lays the foundations for the subsequent more in-depth analysis of killer acquisitions.

[Part II](#) of this thesis will consist of an economic analysis that seeks to create a deeper understanding of killer acquisitions and ascertain whether they are harmful and if so, where the competitive harm lies. To this end, this thesis will first establish the motives behind acquiring and getting acquired, respectively. Thereafter, it will flesh out the rationale behind killer acquisitions and address why, unlike in pharmaceutical markets where the phenomenon of traditional killer acquisitions seems to dominate, the main concerns in digital markets allegedly come from foregoing innovation efforts. It will also discuss whether such transactions are used as a substitute for R&D and assess the positive and negative effects of killer acquisitions. Relying on these findings, Part II will eventually consider the error-cost framework, thereby discussing the benefits of leaning more toward an interventionist approach.

Having laid the economic foundations, [Part III](#) of this thesis will first embark on a full-fledged legal analysis of the current EUMR, which aims to identify the main challenges that killer acquisitions pose to the existing merger control framework. To this end, it will look at jurisdictional, procedural and substantive

questions individually, as well as discuss remedies, thereby identifying the main weaknesses of the existing merger control regulation. The second chapter of this Part will shed light on the Commission's recently enacted Digital Markets Act (DMA), which seeks to regulate gatekeepers in specific and could therefore provide additional legal tools to tackle killer acquisitions in the future.

The findings of the legal analysis will lead to the policy discussion in [Part IV](#)—the very heart of this thesis—which is devoted to exploring various avenues that could render the current EUMR more effective in catching killer acquisitions in the future. This is followed by an analysis of different solutions that could enhance the DMA's effectiveness in the fight against such harmful transactions.

Finally, [Part V](#) of this thesis will summarise the most important learnings gained in the thesis and based on them, answer the main research question.

Scope of the Thesis

As the title implies, this thesis focuses on merger control. It will, therefore, not or only marginally discuss the other pillars of competition law, that is, the prohibition of anti-competitive agreements according to Art. 101 TFEU and the prohibition of abuse of market power according to Art. 102 TFEU¹⁰. Instead, and as mentioned earlier, it will include an analysis of the recently enacted DMA, which could provide a helpful additional tool to tackle prevailing challenges posed by killer acquisitions.

It should further be specified that the focus of this thesis lies on killer acquisitions occurring in digital markets. Thereby, it exclusively considers transactions that involve nascent companies; thus, it does not take into account transactions where well-established companies are being acquired.¹¹ The reason for this limitation lies in the fact that in the digital economy, acquisitions often involve young, innovative companies which lack tangible assets and are yet to earn significant revenue,¹² the nature of which poses major challenges to the current EU merger control regime and therefore deserves closer scrutiny.

¹⁰ Note that Art. 102 TFEU will primarily be discussed in relation to the *Towercast* decision, which is considered important for the discussion of ex-post remedies, see [Part IV: Chapter 1: A. 2.2.](#)

¹¹ Transactions involving only well-established companies would anyway not correspond to the definition of killer acquisitions used within this thesis, see [Part I: Chapter 1: A. 2.](#)

¹² See Lear Report, 7.

It is also worth mentioning that whilst in the literature, killer acquisitions in digital markets are often discussed in the context of the GAFAM companies and their merger strategies, the analysis within this thesis is not limited to these companies. This is because killer acquisition strategies can be applied by any incumbent, thus any other pivotal technology company. Accordingly, although GAFAM will often be cited as examples to illustrate the points made, the analysis of this thesis is not constrained to these firms.

Finally, it should be clarified that this thesis will only include aspects of public enforcement, i.e., rules that are enforced by authorities, and exclude aspects of private enforcement. This is because, due to the ex-ante character of merger control, so far, the discussion on private enforcement is primarily relevant in the context of Art. 101 and Art. 102 TFEU, which is also reflected by the fact that the EU Damage Directive exclusively mentions these articles without referring to merger control.¹³ Given that, as highlighted above, the focus of this thesis lies on merger control and not on Art. 101 and Art. 102 TFEU, this thesis considers private enforcement mostly irrelevant to its topic.¹⁴

¹³ Compare EU Damage Directive, para. 3, finding that “Articles 101 and 102 TFEU produce direct effects in relations between individuals and create, for the individuals concerned, rights and obligations which national courts must enforce. National courts thus have an equally essential part to play in applying the competition rules (private enforcement).”

¹⁴ Note that private enforcement has also been discussed in the context of the DMA, see, for instance, Rurali Giulia and Seegers Martin, ‘Private Enforcement of the EU Digital Markets Act: The Way Ahead After Going Live’ (*Kluwer Competition Law Blog*, 20 June 2023) <<https://competitionlawblog.kluwercompetitionlaw.com/2023/06/20/private-enforcement-of-the-eu-digital-markets-act-the-way-ahead-after-going-live/>> accessed 27 December 2023; Podszun (2021), 92–97; Picht (2021), 98–102. The discussion is, however, primarily focused on the obligations stipulated in Art. 5, 6 and 7 DMA and is only limitedly applicable to killer acquisitions. For more information on the DMA and killer acquisitions, see [Part III: Chapter 2: E](#).

Part I:

Setting the Scene

Chapter 1: Terminologies

Over the past few years, killer acquisitions have increasingly come under the spotlight of the competition community. They have triggered a heated debate about whether and how lawmakers, courts and enforcers should amend current merger control in order to better tackle ongoing concentration challenges witnessed in digital markets. However, before embarking on a full-fledged analysis of killer acquisitions, it is worth laying the foundations by clarifying the most important terminologies and concepts used within this thesis. Note that the terminologies defined below are not used consistently in the literature but represent the author's own interpretation.

A. Killer Acquisitions

To date, the term 'killer acquisition' is not used uniformly in the literature and takes on various meanings. Whilst some authors understand such acquisitions in their literal meaning, i.e., rather narrowly as transactions that aim at the termination of the target's innovation activities in order to prevent the cannibalisation of their own sales,¹⁵ others use it in a more comprehensive way to describe any transaction that aims at pre-empting competition.¹⁶ Given that the definition of this phenomenon is crucial for this thesis, the following sections will explain how this phenomenon will be understood within this thesis.

1. Traditional Killer Acquisitions

In their influential and widely acknowledged study, Cunningham, Ederer and Ma have coined the original killer acquisition narrative, which within this thesis is referred to as 'traditional killer acquisitions'. Such acquisitions describe transactions whereby the acquiring company's strategy is "to discontinue the target's innovation projects and preempt future competition."¹⁷

¹⁵ See, for instance, Cunningham, Ederer and Ma, 653; OECD (2020a), 9–11.

¹⁶ See, for instance, Pérez de Lamo, 51; Turgot, 112; Yun, 653; Petit 225; Caffarra, Crawford and Valletti, 14.

¹⁷ Cunningham, Ederer and Ma, 649.

In general, traditional killer acquisitions are characterised by two features: (i) they are horizontal acquisitions, i.e., they occur between undertakings operating at the same level of the production or distribution chain, and (ii) they lead to the discontinuance of the acquired innovation project.¹⁸ Rather than being a type of transaction, traditional killer acquisitions constitute a theory of harm, meaning a particular type of acquisition that negatively affects competition.¹⁹ They have a defensive scope as they aim to counter a potential competitor and disrupter, which, in the absence of the transaction, may undermine the incumbent's existing business.

2. Killer Acquisitions in Digital Markets

Whilst the phenomenon of killer acquisitions was first observed in the context of the pharmaceutical industry and defined relatively narrowly, Cunningham, Ederer and Ma's findings have also become one of the key academic references in the debate revolving around start-up acquisitions in digital markets. Although a few authors still define killer acquisitions narrowly in the context of digital markets,²⁰ the trend generally goes towards the broader use of the term. For instance, it has also been used to refer to so-called 'reverse killer acquisitions',²¹ constituting a flipped version of traditional killer acquisitions whereby the incumbent integrates the acquired innovation and either discontinues its own innovation²² or forgoes its innovation efforts²³. Following this definition, the term 'killer acquisition' encompasses all acquisitions of nascent

¹⁸ *ibid*, 650; OECD (2020a), 9.

¹⁹ OECD (2020a), 9.

²⁰ EC Report, 117. Crémer, de Montjoye and Schweitzer define killer acquisitions as transactions where "an incumbent acquires a potential competitor with an innovative project that is still at an early stage of its development and subsequently terminates the development of the target's innovation in order to avoid a replacement effect".

²¹ This term was coined by Caffarra, Crawford and Valletti, 14.

²² Such transactions have also been referred to as 'suicidal acquisitions', see Svend Alback's note at the 7th Global Merger Control Conference (Conference, 6 December 2019).

²³ In the literature, transactions whereby the incumbent's innovation efforts are foregone are also referred to as 'zombie acquisitions', see MacLennan Jacquelyn, Kuhn Tilman and Wienke Thilo, 'Innocent Until Proven Guilty – Five Things You Need to Know About Killer Acquisitions' (Informa Connect, 3 May 2019) <<https://informaconnect.com/innocent-until-proven-guilty-five-things-you-need-to-know-about-killer-acquisitions/>> accessed 27 December 2023.

companies by incumbents that aim to remove a potential future competitive or disruptive threat, irrespective of whether the target is discontinued post-transaction.²⁴

It should be specified that the trend of broadening the term killer acquisition in the context of digital markets is owed to the fact that instead of terminating the acquired companies, large technology companies operating in such markets often purchase nascent firms with new or complementary functionalities or services which they then either integrate into an existing product or service or, more broadly, gobble up into their ecosystems. In light of this peculiarity of digital markets, this thesis considers the adoption of a wide definition of the term sensible and will therefore understand killer acquisitions to include all acquisitions that harm innovation and serve to tame a potential future competitive or disruptive threat that may have arisen in the absence of the transaction.

B. Merging Parties

Having established the term killer acquisitions, this subchapter introduces the reader to the merging parties involved in such transactions, that is, incumbents and nascent companies.

1. Incumbents

In general, the term ‘incumbent’ refers to any company that is dominating a market. Such companies are characterised by the fact that they generally enjoy an ‘incumbent’s advantage’, meaning they have access to a deeper insight into consumers’ needs than rival companies and can, therefore, better meet consumers’ needs. Moreover, incumbents’ knowledge of consumers’ needs should be less susceptible to imitation than the features and functions of their products or services.²⁵ Typical examples in the digital markets are GAFAM as well as other large technology firms like Netflix, Uber and Airbnb.

²⁴ See, for instance, Pérez de Lamo, 51; Turgot, 112; Yun, 653; Alexiadis and Bobowiec, 70; Petit, 225; Caffarra, Crawford and Valletti, 14, who all adopted a broad definition of killer acquisitions.

²⁵ For more information, see MacMillan Ian and Selden Larry, ‘The Incumbent’s Advantage’ (Harvard Business Review, October 2008) <<https://hbr.org/2008/10/the-incumbents-advantage>> accessed 27 December 2023.

2. Nascent Companies

Defining the meaning of ‘nascent company’, which within this thesis is used as a synonym for start-ups, is a daunting challenge as there is no globally accepted and concise definition of this term. In general, start-ups can be characterised as young, not yet established companies. They are often perceived to bear a high potential for future growth, and if successful, they typically grow faster than their industry.²⁶ Accordingly, nascent companies usually follow a quick expansion strategy and can bring about disruption in the market. Due to the challenges they face to become viable and to secure sufficient financial and human capital, they often carry high downside risks, meaning the risk of drastic loss in value. At the same time, their disruptive nature provides them with high upside potential.²⁷ This has the consequence that, as rightfully pointed out by Ries, nascent companies typically innovate “under conditions of extreme uncertainty”²⁸ – a particularly crucial feature to keep in mind when discussing killer acquisitions.

Considering the aforementioned features, within this thesis, the term start-up will be used to describe a private company that, in principle, works like any other firm but is characterised by (i) its young nature, (ii) its ability for explosive growth and (iii) operating in extreme uncertainty. For this thesis, it makes sense to keep the definition broad and not define the term ‘start-up’ based on specific criteria like revenue, number of employees or value.²⁹ After all, from a legal perspective, the main challenges arising from start-up acquisitions can be traced back to the fact that nascent firms’ development is often uncertain, making their competitive implications difficult to predict.

²⁶ Hayn, 12 et seq.

²⁷ Frei, 12 et seq.

²⁸ Ries, 27.

²⁹ Compare with the definition in the Eurostat-OECD Manual, 61 et seq., where start-ups were defined as follows: “All enterprises up to 5 years old with average annualised growth greater than 20% per annum, over a three year period, should be considered as gazelles.[...] Growth can be measured by the number of employees or by turnover.[...] A provisional size threshold has been suggested as 10 employees at the beginning of the growth period[...].” Another definition was also chosen by Wilhelm who finds that a company should be viewed as a start-up if it is below the following thresholds: \$100m revenue, 500 employees and \$2.5bn valuation, see Wilhelm Alex ‘The Definition of a Startup in 2018 (By the Numbers)’ (Crunchbase, 13 September 2018) <<https://news.crunchbase.com/news/the-definition-of-a-startup>> accessed 27 December 2023.

C. Technology Companies

This thesis will often use the term ‘technology company’. Given that almost every business has some form of a digital touchpoint which may involve the use or sale of technology, it is important to specify the meaning of this term.

Depending on how the term ‘technology company’ is defined, it can be very broad, virtually including any firm that, in one way or another, is connected to digitalisation. In fact, even certain salad chains have been calling themselves technology companies.³⁰ However, such a definition would be too broad for the purpose of this thesis as it would also include firms that are not operating in digital markets. For this reason, this thesis will understand this term more narrowly to refer to any firm “that provides a digital technical service/product/platform/hardware, or heavily relies on it, as its primary revenue source.”³¹ This definition allows focusing exclusively on companies whose business model mainly depends on technology, excluding firms that use technology primarily as an add-on to their primary products or services. Accordingly, technology firms as understood herein will be defined rather narrowly, only encompassing firms such as Facebook—whose main business is to provide a social media platform—, Apple—whose main business is to distribute hardware—or Uber—whose main service is to offer ride-hailing services through its platform.

D. Innovation

Given that the digital economy revolves around innovation and, by fostering economic growth, innovation generally plays a significant role in competition policy, it is crucial to clarify the term.

1. Definition

There are various definitions of the term ‘innovation’. One of the first attempts to define the term was made by the famous economist Schumpeter who stated that innovation describes the process of introducing new elements or a new

³⁰ Guzzetta Marli, ‘Why Even a Salad Chain Wants to Call Itself a Tech Company: The case for why you should – or shouldn’t – call yourself a tech company’ (Inc., May 2016) <<https://www.inc.com/magazine/201605/marli-guzzetta/tech-company-definition.html>> accessed 27 December 2023.

³¹ Heath Catherine, ‘What is a ‘tech company’, anyway?’ (Tech Nation, 1 November 2017) <<https://technation.io/news/tech-company-definition/>> accessed 3 March 2023.

combination of old elements to industrial organisations, eventually leading to economic growth.³² The OECD further specifies that innovation refers to “a new or improved product or process (or a combination thereof) that differs markedly from the unit’s previous products or processes and that has been made available to potential users (product) or brought into use by the unit (process).”³³ Ries additionally highlights that the term ‘innovation’ includes not only classic scientific discoveries but also the use of existing technologies for new purposes or the invention of a new business model.³⁴

2. Types of Innovation

To better grasp the term ‘innovation’, one can further distinguish between the following types of innovation: sustaining and disruptive.³⁵ Whereas sustaining innovation refers to improvements to existing products or services, disruptive innovation always involves a major technological jump.³⁶ For instance, the addition of slow-motion or stop image capacities to a videocassette recorder both represented sustaining innovations. On the other hand, the replacement of the videocassette recorders through Digital Versatile Disks, more commonly known as DVDs, constituted a disruptive innovation.³⁷ Accordingly, sustaining innovation is about maintaining existing technology, thereby focusing on satisfying current as well as future customer needs in order to secure profits and growth. In contrast, disruptive innovators offer “a very different value proposition than had been available previously.”³⁸ They do not just make a product or service better but offer a completely new product or service that disturbs prevailing consumer habits and behaviours in a considerable way. Disruptive innovations are generally characterised by being cheaper, simpler and often more convenient for consumers than existing products or services.³⁹

³² Schumpeter (1934), 66.

³³ OECD (2018), 20.

³⁴ Ries, 27.

³⁵ This distinction was first made by Christensen in 1997 in his book ‘The Innovator’s Dilemma’.

³⁶ Christensen, xix.

³⁷ De Streel and Larouche, 2.

³⁸ For a comprehensive overview of these different types of innovations, see Christensen, xix–xx; Christensen, Anthony and Roth, xv–xvii.

³⁹ *ibid.*

3. The Process of Disruption

Given the important role disruption plays within this thesis, it is crucial to better understand how disruption occurs.

Disruption describes the process whereby a small firm with fewer resources has the potential to challenge an incumbent successfully. This is because, whilst incumbents typically focus on sustaining innovation, they often ignore the needs of certain customer segments.⁴⁰ Entrants that exhibit disruptive potential specifically target these customer segments that are unattractive to incumbents. They typically do so by starting from a fringe market, i.e., by disrupting either from a low end of a prevailing business or by creating a new market. Once gaining traction in this market, they move upmarket, ultimately offering a service that incumbents' mainstream customers need whilst preserving the advantages that characterised their early success. As soon as mainstream customers switch to the new entrant, disruption happens.⁴¹ Disruptive technologies are, therefore, disruptive because they eventually compete within the mainstream market against established products or services.⁴² Famous examples of disruptive technologies are the Kodak camera, Apple's personal computer and the eBay online marketplace.⁴³

E. Different Types of Competitors

Given that this thesis will often refer to potential competitors, it is crucial to briefly distinguish them from actual competitors, which is the other type of competitors the European Commission refers to.⁴⁴

⁴⁰ This will be further elaborated on in Part II.

⁴¹ Christensen Clayton M., Raynor Michael E., and McDonald Rory, 'What is Disruptive Innovation?' (*Harvard Business Review*, December 2015) <<https://hbr.org/2015/12/what-is-disruptive-innovation>> accessed 27 December 2023.

⁴² Christensen, xxvii.

⁴³ Christensen, Anthony and Roth, xvii.

⁴⁴ See Horizontal Merger Guidelines, para. 5.

1. Actual Competitor

Merging companies are considered to be actual competitors when they operate in the same relevant market, i.e., when their products or services are considered substitutable at the moment of the competitive assessment.⁴⁵

2. Potential Competitor

A potential competitor refers to a company that offers a product or service which could compete with an existing product or service in the future but has not yet entered the market in which the other company operates at the time of the transaction. It is therefore used to describe forecasting entry that is likely to exert competitive constraints on the acquirer in the foreseeable future.⁴⁶

F. Digital Markets

Having defined the most important terms regarding killer acquisitions, it is important to turn to the relevant definitions related to digital markets. Thereby, it is worth noting that although the term ‘digital markets’ is widely used, there is no legal definition of such markets. In general, they are often used to refer to business activities based on digital information and communication technologies (ICT). Unlike traditional markets, digital markets are characterised by two and multi-sided markets that are interconnected through so-called ‘digital platforms’. The following sections will therefore explain these concepts in more detail.

⁴⁵ See Guidelines on Art. 101 TFEU, para. 10; For the definition of the relevant market, see below [Part III: Chapter 1: C.](#)

⁴⁶ See OECD (2021), 9 with further remarks; Horizontal Merger Guidelines, paras. 58–60. Note that in the US, the term ‘nascent competitors’ is sometimes used. This term has been developed in the US Microsoft case by the Department of Justice in the late 1990s (*United States v Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001)). According to Hemphill and Wu, the term ‘nascent competitor’ is used to describe “a firm whose prospective innovation represents a serious future threat to an incumbent. The firm’s potency as a competitor is yet not fully developed and hence unproven”, see Hemphill and Wu, 1880. Following this definition, nascent competitors’ potentiality of becoming a rival one day is more uncertain than in potential competitor cases as it has yet to be seen whether it may actually mature into a significant rival within or outside the same relevant market. In the EU, the term has, however, not (yet) been adopted by the European Commission and will therefore not be used. Instead, it will be referred to as future potential competitors.

1. Two and Multi-Sided Markets

The economic concept of two-sided markets is not new and has already been analysed in the context of traditional markets.⁴⁷ The term ‘two-sided markets’ was first coined by Rochet and Tirole in 2003.⁴⁸ In a nutshell, two-sided markets, which in the advent of digital markets are more commonly referred to as multi-sided markets, can be viewed as markets in which specific products or services are offered to different groups of consumers and which exhibit externalities that arise because the two or more groups of customers are connected or coordinated in some way.⁴⁹ Accordingly, to successfully do business, companies operating in two or multi-sided markets depend on the participation of all groups of consumers.⁵⁰ For instance, when a person goes to a bar to buy a coffee and pays with a credit card, the consumer must first authorise the payment. After that, the payment request will be processed by a banking platform which controls the transaction. Once authorised by the bank, the shop owner will eventually receive the payment in their bank account through the platform. Following this example, companies operating in digital markets act as intermediaries “to internalise the externalities created by one group for the other group[s]”.⁵¹ These intermediaries are commonly referred to as digital platforms.

2. Digital Platforms

The term ‘digital platform’, also called online platform, refers to “an undertaking operating in two (or multi)-sided markets, which uses the Internet to enable interactions between two or more distinct but interdependent groups of users to generate value for at least one of the groups.”⁵² Put differently, digital platforms link two or multi-sided markets. Prominent examples are, for instance, e-commerce platforms like Amazon or eBay, search engines such as Google or Yahoo! or social media sites like Facebook or LinkedIn.

⁴⁷ See, for instance, Rosse, 522–534, who devoted a lot of attention to the newspaper market.

⁴⁸ See Rochet and Tirole, 990–1029.

⁴⁹ Famous seminal papers on two-sided markets are provided, for instance, by Caillaud and Jullien (2001), 797–808; Caillaud and Jullien (2003), 309–328; Evans (2003), 325–381; Wright, 44–64; Parker and Van Alstyne, 1494–1504; Armstrong, 668–691.

⁵⁰ For more information on two-sided markets, see OECD (2009).

⁵¹ Evans (2003), 332.

⁵² EC, Summary of Public Consultation, 5. Note, however, that there is no globally accepted definition of the term.

Compared to classic pipeline companies, which create value by exercising control over the linear sequence of activities and by processing raw materials into end products, digital platforms generate additional value by organising external resources of their users through an infrastructure that enables different actors to exchange their own goods or services. They, therefore, function as hubs with an array of complementing companies that gain access to the end customer through the alignment of standardised technologies.⁵³ As a result, digital platforms bring about value by bundling and organising the specific expertise of many peripheral complementors, which in turn contribute to a magnitude of offers that could not be achieved through traditional business models.⁵⁴ By making digital infrastructure accessible to external providers and users, they enable consumers worldwide to benefit from their products and services via a single platform. Accordingly, digital platforms increase the value of economic activities by providing the technical infrastructure for the collaboration of various actors, thereby optimising both individuals' and companies' asset utility in previously unimaginable ways⁵⁵ whilst eventually facilitating economic opportunities.⁵⁶

Although the concept of platforms has, in theory, existed for decades, for instance, in the form of newspapers or auctions, it was only with the rise of information technology that efforts and transaction costs, both internally and externally, could be decreased to create efficient structures that accelerated user growth in an unprecedented manner.⁵⁷ In turn, this has led to the emergence of complex webs of interactions, commonly referred to as 'ecosystems'.

3. Ecosystems

The usage of the term 'ecosystem' in the context of economics has gained popularity among researchers, practitioners and policymakers ever since the publication of Moore's work on 'business ecosystems' in 1996. Akin to biological ecosystems that consist of a multitude of interdependent organisms, he describes ecosystems in the business context as a phenomenon where "companies co-evolve capabilities around an innovation: they work cooperatively and competitively to support new products, satisfy customer needs, and eventually

⁵³ Jacobides, Cennamo and Gawer (2018), 2258.

⁵⁴ Parker, Van Alstyne and Choudary (2016b), 55.

⁵⁵ Furman Report, para. 1.16.

⁵⁶ Kumkar, 27; Parker, Van Alstyne and Choudary (2016a), 8 et seq.

⁵⁷ Miehé and Lingens, 45.

incorporate the next round of innovations.”⁵⁸ Adner further defines ecosystems as “the alignment structure of the multilateral set of partners that need to interact in order for a focal value proposition to materialize.”⁵⁹ Departing from this definition, business ecosystems can be found to consist of independent players, commonly called complementors, who interact and combine their offerings to create and commercialise innovations that eventually benefit consumers.⁶⁰ With regard to platforms, more specifically, they can be viewed as a “network of innovation to produce complements that make a platform more valuable.”⁶¹

Although ecosystems are not alike and can occur in various forms, they can generally be divided into two types: multi-actor and multi-product. Whereas the former refers to “groups of independent actors that collaborate through nongeneric complementarities for the provision of a collectively produced product or service or bundle of products and services”,⁶² the latter establishes different complementary products or services that form a bundle together which benefits end consumers.⁶³ In the context of digital markets, many ecosystems combine both multi-actor and multi-product ecosystems. Such ecosystems usually take a ‘hub and spoke’ form, which is characterised by various peripheral firms connected to the focal platform via shared or open-source and/or the alignment of standardised technologies.⁶⁴ The central platform in charge of the organisation is frequently called the ‘ecosystem orchestrator’, which will be explained in more detail in the following section.

4. Ecosystem Orchestrators

As already touched on, the web of interactions that characterises ecosystems is typically coordinated and shaped by a central actor, the so-called ‘ecosystem orchestrator’. It is this pivot actor that paves the way for other members to invest in a shared future in order to profit together.⁶⁵ Ecosystem orchestrators guide the involvement of partners, align activities and strategies and create a value distribution that satisfies the demands of all parties. Moreover, they

⁵⁸ Moore, 76.

⁵⁹ Adner (2017), 40.

⁶⁰ *ibid.*

⁶¹ Ceccagnoli et al., 263, referring to Gawer and Cusumano.

⁶² Jacobides and Lianos, 1205.

⁶³ *ibid.*

⁶⁴ Jacobides, Cennamo and Gawer (2018), 2258.

⁶⁵ *ibid.*

are responsible for coordinating the value blueprint and supervising the strategy envisioning, including increasing innovative capabilities.⁶⁶ In a nutshell, ecosystem orchestrators “decide the rules of engagement: who does what, the conditions of participation, and governance.”⁶⁷ They provide linked services across multiple layers of value chains whilst relying on many different complementors, such as mobile devices, operating systems and apps with whom they cooperate and compete simultaneously.⁶⁸ Mostly, the role of ecosystem orchestrators is occupied by large incumbents. Prominent examples of ecosystem orchestrators are the US technology companies GAFAM, as well as their Chinese counterpart firms like Baidu, Alibaba or Tencent, also known as BAT. However, other platforms, such as Visa, also take on such roles.

5. Gatekeepers

Typically, ecosystem orchestrators also position themselves as gatekeepers.⁶⁹ Gatekeepers generally describe companies with “quasi-irreplaceable access to consumers” that have control or significant influence over access to specific markets, market segments or customer groups.⁷⁰ This usually puts them in a position where they enjoy information advantages, such as knowledge of users’ market activities and individual preferences that lead to market power.⁷¹ More precisely, gatekeepers can typically control both the information flow and interoperability, which, from a competitive perspective, puts them in an advantageous position. For this reason, they play a crucial role in the context of competition law and, within this thesis, will be especially important with regard to the DMA elaborated on in more detail in [chapter 2 of Part III](#).

⁶⁶ Iansiti and Levien, 73 et seq.

⁶⁷ Jacobides and Lianos, 1205.

⁶⁸ Petit and Schrepel, 3.

⁶⁹ Jacobides and Lianos, 1205. Note that the term ‘gatekeeper’ is not used universally. In the UK, for instance, the CMA calls such firms ‘companies with Strategic Market Status’, see CMA, Advice of the Digital Markets Taskforce, 4–5.

⁷⁰ Jacobides and Lianos, 1205.

⁷¹ Parker, Petropoulos and Van Alstyne, 1323.

Chapter 2: Understanding Digital Markets

Drawing on the previous clarifications of the most crucial terminologies for this thesis, this chapter aims to introduce the reader more closely to the functioning of digital markets, the understanding of which is of paramount importance for the subsequent economic and legal analysis. To this end, it will first look at the features of digital markets, followed by a short introduction of barriers to entry, which aims to show why entry in such markets can be a challenging task for fledgling companies and therefore requires particular attention from competition authorities.

A. Features of Digital Markets

Given that, as previously established, digital markets are characterised by two and multi-sided markets connected through digital platforms,⁷² this subchapter seeks to introduce the most important features of such markets. By doing so, it aims to create a deeper understanding of the functioning of digital markets and their peculiarities which is crucial for the subsequent more in-depth analysis of killer acquisitions.

1. Network Effects

Network effects describe the phenomenon whereby the utility of a good or service to one group of customers hinges on the consumption of the same good or service by the same or another group of consumers.⁷³ Accordingly, when network effects are present, the number of users of a product or service generally determines its utility or value to consumers.⁷⁴ There are two types of network effects that can contribute to rapid growth: direct and indirect network effects. Direct network effects, on the one hand, typically work like traditional telephone networks, meaning that the users' gain lies in the adoption of the product or service by another user as opportunities to interact with peers increase. Indirect network effects, on the other hand, are defined by improved

⁷² [Part I: Chapter 1: F. 1](#) and [Part I: Chapter 1: F. 2](#).

⁷³ Rochet and Tirole, 995 et seq.

⁷⁴ Katz and Shapiro (1985), 424.

opportunities to interact with the other side of a market.⁷⁵ Video games provide an illustrative example: the more user there are, the more video game designers are attracted, which in turn is more beneficial for users and vice versa. A common feature of direct and indirect network effects is that an individual user's marginal benefit is not based on the value of the service but rather on the number of (expected) consumers joining the network from both sides.⁷⁶ Consequently, unlike traditional markets, where success is typically measured in terms of profits, the success of a company offering platform services largely depends on its ability to simultaneously draw both sides' attention.

Economically speaking, network effects have no impact on the market when there are zero users. This is because, in such cases, users lack the incentives to join the platform in the first place. However, as more consumers join the network, network effects start being created, resulting in an increased willingness by other consumers to join the platform and/or pay for a product or service.⁷⁷ For instance, the more one's friends use Instagram, the more beneficial it is for an individual to open an account, and the higher one's willingness becomes to pay for the use of the app, be it in the form of a subscription fee, personal data or simply to tolerate ads in the news feed.⁷⁸ As a result, the more users on Instagram, the more lucrative it is for advertisers to pay the platform to publish their ads.

It ought to be specified that network effects are the primary reason users commonly do not pay a monetary price on digital markets but recompense platforms by paying attention to the advertising displayed on the site, thereby frequently granting them the right to use these data.⁷⁹ Platforms engage in such 'pricing' strategies because, in order to better attract attention from both sides of the market, they often subsidise one side by typically offering services at zero cost⁸⁰ whilst charging a fee to the other side.⁸¹ By providing free services to users, platforms hope to secure consumers' attention, which in turn should attract more attention from the other side. This explains why a decisive

⁷⁵ For more economical information on the difference between direct and indirect network effects, see, for instance, Schwalbe and Zimmer, 55–58; Clemence, 633–645; Church and Grandal, 708–712.

⁷⁶ Petit, 75.

⁷⁷ *ibid*, 75 et seq.

⁷⁸ *ibid*, 79.

⁷⁹ For more information, see, for instance, Schwalbe and Zimmer, 58–61; Körber, 764; Hören, 463.

⁸⁰ Note that consumers typically 'pay' with their data. This will be discussed in more detail in [Part I: Chapter 2: A. 5.](#)

⁸¹ Evans (2016), 3.

parameter for platforms is users' attention or the 'time on site' spent.⁸² Eventually, the more attention a platform can draw from both sides of the market, the more likely it is that the market may tip in the companies' favour—a phenomenon that will be explained in the following section.

2. Market Tipping

Market tipping refers to “the tendency of one system to pull away from its rivals in popularity once it has gained an initial edge”,⁸³ which leads to a natural form of monopoly, leaving little to no room for potential entrants. This is because new entrants would face significant challenges to persuade users and potential other sides of the market to collectively switch to their technology. Accordingly, a tipped market can discourage potential rivals from attempting to compete for those customers and suppliers.⁸⁴

However, it should be highlighted that by merely signalling a point in time, market tipping cannot form the basis of an economic model.⁸⁵ Instead, market tipping should be viewed as a ‘mental model’⁸⁶ which identifies certain consumer behaviour patterns. More precisely, as the famous economist Schelling found, market tipping effects reflect “how people’s behaviour depends on how many are behaving in a particular way”.⁸⁷ Thus, if, for instance, increasingly more friends start using Instagram instead of its rival Snapchat, one is prone to behave similarly and switch to Instagram too.

Following this observation, the question arises: at which point does a market start tipping? The correct answer to this question is that the point at which a firm crosses the tipping zone cannot be generalised since users' utilities vary

⁸² Wu, 794.

⁸³ Katz and Shapiro (1994), 106.

⁸⁴ Shapiro and Varian, 184–185, finding that “collective switching costs are the biggest single force working in favour of incumbents.” They further state that “convincing ten people connected in a network to switch to your incompatible network is *more* than ten times as hard as getting one customer to switch. But you need all ten, or most of them: no one will want to be the first to give up the network externalities and risk being stranded. Precisely because various users find it so difficult to coordinate to switch to an incompatible technology, control over a large installed base of users can be the greatest asset you can have.”

⁸⁵ See Petit, 82.

⁸⁶ Griffin Tren, ‘Two Powerful Mental Models: Network Effects and Critical Mass’ (*Andreessen Horowitz*, 7 March 2016) <https://a16z.com/2016/03/07/network-effects_critical-mass/> accessed 27 December 2023.

⁸⁷ Schelling, 94.

widely.⁸⁸ Instead, it can be said that tipping “kicks in once a product crosses a critical point of user adoption, catapulting the supplier away from competition and towards a monopoly equilibrium.”⁸⁹ Put differently, when a company reaches a so-called ‘critical mass’ of users, at which point the firm can attract a sufficient number of users on both sides, it can benefit from positive network effects, which allow it to grow further quickly. Such progression can eventually lead to a state where the market ‘tips’ in the company’s favour, dominating the market from that point onward. In turn, this state can give rise to lock-in effects whereby users are so loyal to a given company’s technology that they consider competing services not worth switching to, even if their quality is superior or the price is more attractive.⁹⁰

In this context, it is important to underscore that the tipping zone is not static but strongly dependent on the changing market potential, which can even cause a market to re-tip. Accordingly, the tipping zone is an incessantly moving target.⁹¹ The e-commerce giant, Amazon, provides an excellent example: its critical range evolved, starting as a book retailer in 1997, then becoming the world’s digital retailer in 1999 and finally seeking to grow into “Earth’s Biggest Selection and to be Earth’s most customer-centric company” in 2003.⁹² Undoubtedly, Amazon is not alone in facing tipping challenges. In fact, it is safe to say that all companies operating in digital markets, including the largest ones, time and again face tipping challenges that they need to overcome,⁹³ for instance, through acquisitions.

3. Competition for the Market

The combination of the prevalence of network effects and the resulting tipping effects often leads to a temporary ‘winner-takes-it-all’ (or at least ‘winner-takes-most’) situation.⁹⁴ This has the consequence that competition in digital markets commonly occurs for the market rather than in the market, meaning

⁸⁸ See the analysis conducted by Arroyo-Barrigüete et al., 643–654, showing that it is not possible to define a critical mass in a general way.

⁸⁹ Petit Nicolas and Moreno Bellosó Nataila, ‘A Simple Way to Measure Tipping in Digital Markets’ (Promarket, 6 April 2021) <<https://promarket.org/2021/04/06/measure-test-tipping-point-digital-markets/>> accessed 27 December 2023.

⁹⁰ For more information on lock-in effects in general, see Farrell and Klemperer, 1967–2072; Shapiro and Varian, 103–134, providing also various examples of lock-in effects.

⁹¹ Petit, 84.

⁹² SEC, Form 10-K.

⁹³ Petit, 84, mentioning additional examples, such as Facebook, Uber and Netflix.

⁹⁴ See Furman Report, 4.

that companies frequently compete for the rents that flow from a new, uncolonised market⁹⁵ to prevent existing large incumbents from exerting market power.⁹⁶ After all, it is easier to address new customers or such that do not use the incumbent's technology than to steal existing customers from an entrenched firm. As a result, digital markets are frequently characterised by firms operating on fringe markets, trying to make their way to the incumbent's mainstream market from there. Since the development of companies operating in such markets is usually highly uncertain, competition often goes beyond current products and services and extends to future products and services.⁹⁷ In turn, this creates a highly dynamic environment where companies constantly need to innovate, which will be discussed in the following section.

4. Technology Dynamism

Digital markets are highly dynamic and characterised by continuous change. This is owed to the constant technological progress and the myriads of new firms that are born every year, incessantly bringing about new or improved technologies that quickly render existing ones obsolete. Hence, existing companies that fail to meet shifting consumer needs and keep up with the speed at which market conditions change are threatened to be quickly replaced. The ability to rapidly recognise and exploit opportunities is, therefore, key in the digital economy.⁹⁸ In fact, innovating is a crucial factor for technology firms' survival in competition and thus forms a core element of their success.⁹⁹

Business expansion is a strong indicator of the steadily growing competition for innovation.¹⁰⁰ It shows that to keep up with consumer demand, companies need to innovate—and because they are innovating, they also expand simultaneously. Online banking and payment, healthcare and wearable devices, such

⁹⁵ Geroski, 153.

⁹⁶ Lear Report, i.

⁹⁷ See, for instance, Farhad Manjoo, 'Why We May Soon Be Living in Alexa's World' (*The New York Times*, 21 February 2018) <<https://www.nytimes.com/2018/02/21/technology/amazon-alexa-world.html>> accessed 27 December 2023.

⁹⁸ Ezrachi and Stucke (2022), 3.

⁹⁹ See EC, EU R&D Scoreboard, 3 et seq. It shows that ICT producers and ICT service providers belong to the top investors in R&D.

¹⁰⁰ Take, for instance, the large platforms Google or Microsoft. Originally, they were primarily known for their search engine and PC Operating System and are now both also competing on cloud services. For more information, see Darrow Barb, 'Shocker! Amazon remains the top dog in cloud by far, but Microsoft, Google make strides,' (*Fortune*, 19 May 2015) <<http://fortune.com/2015/05/19/amazon-tops-in-cloud/>> accessed 27 December 2023.

as smartwatches or smart rings, are only a few examples to be mentioned when discussing how firms operate across different layers of industries to persist with technological dynamism. At the same time, the increased verticalization of platforms' core products and services allows them to collect a vast amount of data, which, as will be explained in the following section, helps them consolidate their market power.

5. The Role of Data

Data are non-rivalrous goods, i.e., unlike physical assets, they can be duplicated and made accessible to other users without reducing the volume of data available for the original collector.¹⁰¹ They constitute a form of information about human activities, which is usually converted by platforms into a commodity to generate profits, for instance, by optimising the exploitation of users' behaviour and predicting new trends more accurately.¹⁰²

The term 'data' is commonly used in the context of the buzzword 'big data', whose ambiguity and misconceptions over its true meaning have become increasingly blurred through its application across various discourses. In the simplest terms, big data describes the use of large-scale computing power and technologically advanced software to collect, process and analyse various types of data produced from many sources.¹⁰³ It is usually characterised by the five V's, standing for (i) the constantly increasing volume of data companies can collect,¹⁰⁴ (ii) the velocity at which data is collected and processed, (iii) the variety of the aggregated information, (iv) the degree of veracity that can be attributed to them and (v) the value that can be attached to data.¹⁰⁵

Although data may have always been an important business input, their role has sparked the fourth industrial revolution. Indeed, for digital platform companies, data collection and analysis constitute an integral part of how they cre-

¹⁰¹ Furman Report, 23.

¹⁰² Muldoon, 18 with further remarks.

¹⁰³ See OECD (2014), 5 et seq.

¹⁰⁴ For instance, in 2012 the amount of data collected by companies skyrocketed to more than three million, and ever since, this volume doubles approximately every 40 months, see Banco Bilbao Vizcaya Argentaria, 'The five V's of big data' (BBVA, 26 May 2020) <<https://www.bbva.com/en/five-vs-big-data/>> accessed 27 December 2023.

¹⁰⁵ For more information on how the five V's were developed, see, for instance, Zitter Leah, 'What are the 5 V's of Big Data?' (TechnologyAdvice, 23 November 2022) <<https://technologyadvice.com/blog/information-technology/the-four-vs-of-big-data/>> accessed 27 December 2023.

ate value. In the context of competition and innovation, they can convey considerable advantages to companies that have more of them. After all, the more data a firm has and the more comprehensive its consumer profiles are, the more successfully it can custom tailor its products and services, which in turn renders them more desirable for users as well as for market players on the other side of the market.¹⁰⁶ For users, this applies because they get more accurate products or services, whereas, for actors on the other side of the market, this holds true as they can more successfully target potential willing buyers.¹⁰⁷

In addition to the above stated, by enabling data-driven innovation, thereby increasing the accuracy of predicting trends and demand, data can play a crucial role in a company's expansion strategy as they facilitate efficient market entry in weakly related or even completely unrelated market segments.¹⁰⁸ This also reflects in the empirical study led by Zhu and Liu on Amazon, which reveals that based on the large amount of data the company possesses, the incumbent can detect popular product categories much more quickly than its (potential) competitors, thereby facilitating its entry strategy in different product markets.¹⁰⁹ Accordingly, Amazon's vast amount of data allows it to pursue highly efficient business expansion by exploiting new business opportunities whilst reducing the marginal cost of innovation. Other large platforms benefit from similar effects. For instance, Google's search engine enables it to gather data from the search queries of its users, which in turn can help the company to identify types of products or services that are high in demand or low in supply. This mechanism enables the search giant to align its strategy correspondingly, thereby making additional revenue.¹¹⁰

To the extent that a company monetises the data collected to attention seekers, data may also create a potential bottleneck for access to users, i.e., putting large companies in a position of gatekeepers that allows them to control access to certain goods or a group of users.¹¹¹ For instance, even though many data brokers know what consumers buy, Google additionally knows what they search for. Likewise, although most data brokers know consumers' credit

¹⁰⁶ See EC Report, 110 et seq.

¹⁰⁷ See Graef (2015), 485 with further remarks.

¹⁰⁸ For more information, see Prüfer and Schottmüller, showing that data-driven network effect can contribute to market tip and that data collected in one market allows firms to improve their product or services in another.

¹⁰⁹ For more information, see Zhu and Liu, 2618–2642.

¹¹⁰ See Bourreau and de Streel (2019), 9.

¹¹¹ *ibid.*, 17.

scores, Facebook also knows the people they are interacting with and how they interact with them—information that is invaluable for businesses that want to advertise their products or services.¹¹²

6. Economies of Scale and Scope

Economies of scale and scope form another important feature of digital markets. Economies of scale describe the saving in costs that results from an increased level of production.¹¹³ Economies of scope, on the other hand, are “cost savings that occur when two or more products are produced jointly by a single firm, rather [than] being produced in separate firms.”¹¹⁴ In general, it is worth mentioning that technology firms benefit from higher economies of scale and scope compared to traditional companies. This has multiple reasons: higher economies of scale can, on the one hand, be traced back to the fact that digital platforms are accessible worldwide and are, as a result, not constrained by geography.¹¹⁵ On the other hand, online platforms’ cost structure, i.e., high fixed and low variable costs, allows them to scale more quickly than traditional businesses as they face low or near-zero marginal costs of additional users. By enabling technology companies to operate simultaneously across multiple adjacent markets, the nature of digital platforms also allows them to benefit from economies of scope. These economies of scope can be derived through different streams, such as the sharing and merging of user data and technical expertise, as well as the use of existing customer and supplier relationships. Thereby, the use of shared inputs can decrease the marginal cost whilst benefitting product development and production. Hence, due to low incremental costs, companies that profit from large economies of scope likely face a comparably low bar to expand their portfolio.¹¹⁶ This also reflects in the study conducted by Bourreau and de Streel, showing that the strong economies of scope witnessed in digital markets for product development provide higher incentives to diversify product lines and expand in new markets.¹¹⁷ Evidence of this can also be found when looking at GAFAM or BAT companies’ portfolios. Be-

¹¹² Teachout, 75.

¹¹³ For more information, see Core-Econ, *The Economy* (Electric Book Works, 2017) Unit 7.2. <<https://www.core-econ.org/the-economy/book/text/07.html#72-economies-of-scale-and-the-cost-advantages-of-large-scale-production>> accessed 27 December 2023.

¹¹⁴ *ibid.*, Glossary <<https://www.core-econ.org/the-economy/book/text/50-02-glossary.html#glossary-economies-of-scale>> accessed 27 December 2023.

¹¹⁵ Furman Report, 32.

¹¹⁶ *ibid.*

¹¹⁷ Bourreau and de Streel (2019), 16.

sides their flagship products and services, they have considerably expanded their portfolios into a wide array of markets, allowing them to provide hybrid outputs. For example, Google can use its inventions and knowledge in artificial intelligence (AI) across a wide range of projects to either improve existing products or services or develop new ones.¹¹⁸ Among other things, this may also explain why the same small number of large technology firms have successfully built and continuously expanded their ecosystems across several adjacent markets,¹¹⁹ making market entry for newcomers increasingly challenging.

B. Barriers to Entry

Having distilled the main features of digital markets and drawing on the main findings, the remit of this subchapter is to identify the barriers to entry in digital markets. This is crucial as the higher the barriers are, the lower the entry rate is, which affects both competition and innovation.

To ascertain the barriers to entry in digital markets, this subchapter will look at the barriers to entry that new entrants typically encounter in this sector. Barriers to entry are generally important for the topic of this thesis, as the higher the barriers to entry, the more difficult it is for new entrants to disrupt existing market structures. In turn, this means that the higher the barriers to entry, the more important it is to protect innovative nascent companies from being removed from the market at an early stage.¹²⁰

¹¹⁸ Williams Owen, 'Google's deep focus on AI is paying off' (*Charged*, 3 September 2018) <<https://char.gd/blog/2017/googles-deep-focus-on-ai-is-paying-off>> accessed 27 December 2023.

¹¹⁹ Furman Report, 32; Gilbert, 16.

¹²⁰ Note that, in principle, barriers to entry need to be assessed on a case-by-case basis. The explanations here serve the sole purpose of creating a broad understanding of typical barriers to entry in digital markets, which emanate from their specific features that have been described chapter 2 of this Part.

1. Definition

There exists no universal definition for the term ‘barriers to entry’.¹²¹ In general, they can be broadly described as “anything that prevents an entrepreneur from instantly creating a new firm in a market”.¹²² In the language of the European Commission, they “are specific features of the market, which give incumbent firms advantages over potential competitors.”¹²³ Such a broad definition of barriers to entry contains any legal, technical and economic barriers to entry, including factors such as sunk costs, advantages due to product differentiation, significant economies of scale or technical knowledge.¹²⁴ This thesis will adopt this definition of barriers to entry.

2. Factors Raising Barriers to Entry in Digital Markets

Barriers to entry in digital markets are, among other things, heightened by (i) the prevailing market position of a few powerful companies, (ii) behavioural biases and (iii) the limited access to finance and intangible capital. These factors will be explained in more detail in the following sections.

2.1. Effects Entrenching Incumbents’ Market Position

As explored in the preceding subchapter, the cumulative effects of the different features of digital markets, such as the prevailing network and tipping effects in combination with returns to scale of data, significantly contribute to reinforcing existing market structures, thereby allowing established companies to expand more efficiently in related or new markets.¹²⁵ This poses major challenges for new entrants since they often do not possess the user numbers and the data necessary to compete effectively against established and trusted businesses that control data from an extensive network of customers or suppliers. Notably, entry into digital markets is generally difficult for any new-

¹²¹ For instance, Stigler defines barriers to entry in a much more restrictive way as “a cost of producing (at some or every rate of output) [...] which must be borne by a firm which seeks to enter an industry but is not borne by firms already in the industry”, see Stigler (1968), 67. By doing so, this definition of barrier to entry does, *inter alia*, not encompass economies of scale, as it is assumed that established companies faced the same economies when they entered the market.

¹²² Carlton and Perloff, 110.

¹²³ Horizontal Merger Guidelines, para. 70.

¹²⁴ See, for instance, Jickeli, 101–102; OECD (2021), 15.

¹²⁵ [Part I: Chapter 2: A.](#)

comer, no matter how efficient or regardless of the quality of the product or service being offered. After all, due to the presence of strong network effects, they need to convince users not only that their product or service is superior but that it is sufficiently better to outweigh the loss of value that users would incur by switching to a network that is not interoperable with the mass of users on the incumbent platform.¹²⁶ Consequently, provided that the existing product or service is of a reasonably high quality, it is still very challenging even for more efficient and innovative entrants compared to the incumbent to provide consumers with the added value necessary to convince a sufficient number of users to switch. In the digital context, this is a particularly daunting task, not least because new entrants can usually not even attract consumers with lower prices since their services are typically provided for free. To the degree that the next technological revolution focuses on machine learning and artificial intelligence, it is likely that, due to the importance of data for the successful use of such tools, the obstacles for new entrants to become established market players themselves will only grow in the near future.¹²⁷

It is worth highlighting that this observation often holds true despite consumers' ability to multi-home, i.e., their ability to use similar services simultaneously, such as the social media platforms Facebook, Instagram and TikTok. Although these examples show that the possibility of multi-homing can, to a certain extent, act as a barrier remover, many consumers do not take advantage of it due to the convenience cost arising from switching between multiple services.¹²⁸ This particularly applies to products or services that are provided outside incumbents' grid of intertwined products and services as large companies have no interest in directing consumers to such offerings. Due to the large information asymmetries between technology firms and consumers, it is often very difficult for the latter to recognise the benefits that it could derive from switching to an outsider.¹²⁹

2.2. Exploiting Consumer Biases

The preceding subchapter showed that, due to access to a vast amount of processed data, large technology companies can generally more effectively analyse consumers' behaviour than smaller firms. In turn, this allows them to better understand and predict consumer habits, preferences and demands,

¹²⁶ OECD (2021), 15. For more information on network effects, see [Part I: Chapter 2: A. 1.](#)

¹²⁷ Furman Report, 4.

¹²⁸ Stigler Report, 42–43.

¹²⁹ *ibid*, 43.

thus responding more accurately to their needs.¹³⁰ At the same time, it enables them to more effectively exploiting consumer biases, i.e., taking advantage of the cognitive vulnerability of human beings to guide consumers toward sets of behaviours in favour of the company's own benefit—an aspect that is particularly concerning in light of the ever-refining data processing, for instance, through machine learning, which allows large technology firms to understand and exploit consumer biases at an unprecedented level nowadays. Accordingly, more so than in other industries, behavioural aspects play a crucial role in heightening barriers to entry in digital markets¹³¹ and therefore deserve closer scrutiny.

Human beings are generally exposed to several systematic consumer biases that, if exploited on a large scale, can benefit companies. An illustrative instance is provided by search engines. It is well-known that the position of information displayed has an enormous influence on the consumers' decisions.¹³² This is because consumers typically put more weight on the most salient information rather than looking for the most accurate information.¹³³ As a result, by framing information in a certain way, thus increasing the visibility of information that favours their own products and services whilst downgrading rivals' offers, large technology companies can significantly influence consumers' behaviour to their own benefit and to the detriment of new entrants. Among other things, this also explains why large technology companies pay billions of dollars to become a default service. Why would Google have otherwise paid Apple approximately \$15 billion in 2021 to remain Safari's default search engine?¹³⁴

In addition, technology firms may also adapt their services depending on the emotional state of a consumer. To this end, they can ascertain different device inputs, such as eye-tracking sensors. They may also analyse the way a person types or writes emails in different life situations to have their AI tools act correspondingly, thereby nudging the consumer at the right moment towards certain products or services. For example, an AI may recognise that a consumer is frustrated and thereupon present the person with an advertisement for junk food.¹³⁵ In general, the more data available and the better AI works, the more accurate these strategies are, and the better people can be

¹³⁰ [Part I: Chapter 2: A. 5.](#)

¹³¹ See Stigler Report, 58 et seq.

¹³² Joachims et al., 13–14.

¹³³ *ibid.*, 8.

¹³⁴ Ezrachi and Stucke (2022), 69 with further remarks.

¹³⁵ Stigler (1968), 59.

manipulated. Accordingly, the more accurately AI is programmed, the easier it is for firms to distinguish easily influenced people from better-informed consumers.¹³⁶ By exploiting the cognitive bias of human beings, behavioural economics is a powerful tool for incumbents to shape consumers' awareness in their favour. Among other things, it allows companies to steer consumers to the technology that benefits them and away from innovations that could threaten their market position or value chain.¹³⁷

Overall, it can be concluded from these examples that the collection of data is often not merely used to gather information for consumers to create a better, more personalised experience but also to know more about them so that companies can better steer consumers' behaviour in their favour, thereby also heightening market barriers to entry. After all, such strategies make it increasingly difficult for new entrants possessing lesser data than established companies to successfully launch their service or product and gain a foothold in the market in question. As will be explored in the next section, these effects may be further amplified by exclusionary practices, which aim to keep consumers away from products or services that may threaten incumbents' market position in the long run.

2.3. Engaging in Exclusionary Practices

One practice to prevent innovative companies from endangering large technology companies' market position, thereby heightening the barriers to entry, is to exclude new entrants that may potentially rise into a threat from their ecosystems. Probably the most effective way to do so is to deny such start-ups' access to their ecosystem in the first place. The following two subsections will show two methods that are commonly applied in this regard.

a) Rejecting Access to App Stores

Exclusion of a new entrant can, for instance, be achieved by rejecting the access of an app to the app store, such as those operated by Google and Apple. A prominent example in this regard is provided by Disconnect, a privacy company aimed at stopping other apps from collecting data on users.¹³⁸ After the

¹³⁶ *ibid.*

¹³⁷ Note that the term 'cognitive bias' was introduced in the early 1970s by Amos Tversky and Daniel Kahneman to describe human's systematic yet flawed patterns of responses to judgment and decision difficulties.

¹³⁸ For more information, see Disconnect's homepage <<https://disconnect.me/>> accessed 27 December 2023.

launch of its mobile app in 2014, Disconnect enjoyed great success and was downloaded more than five thousand times within the subsequent six days.¹³⁹ However, shortly after its launch, the nascent firm received an email from the Google Play team, informing the new entrant that its app had been removed from the Play Store because it operated unauthorisedly. Consequently, Disconnect tried to comply with Google's conditions; however, it was banned from the app store allegedly because the company failed to give the company specific instructions to follow. As stated by Disconnect's co-founder, "It's like a Kafka novel—you're getting kicked out or arrested for reasons you don't even know."¹⁴⁰ This example is just one of many, which becomes apparent when considering that Apple rejected almost one million apps in 2020.¹⁴¹ This is not to say that all these rejections were unjustified, but rather to show how much power and control certain companies like Alphabet and Apple have over access to their ecosystems. In fact, by controlling the entry gate, they can virtually exclude any new entrant without necessarily giving any transparent reasons, thereby disincentivising innovative companies that may want to threaten the incumbent's market position to come close as they cannot use their app store to reach most consumers in the first place.

b) *Preventing Interoperability*

Another strategy for incumbents to exclude potential threats is to prevent interoperability. Large companies are interested in ensuring that users avoid multi-homing outside their ecosystem. This is when interoperability comes into play. It refers to "the ability to transfer and render useful data and other information across systems, applications or components."¹⁴² Accordingly, if large firms create interoperability between services belonging to their ecosystem, they not only induce strong competitive advantages for consumers to use these services but can simultaneously raise barriers to entry for (potential) competitors that are not interoperable. This is because by preventing or reducing interoperability, they restrict other firms' ability to compete directly

¹³⁹ Albergotti Reed, Barr Alistair and Dwoskin Elizabeth, 'Why Some Privacy Apps Get Blocked from the Android Play Store' (*The Wall Street Journal*, 28 August 2014) <<https://www.wsj.com/articles/BL-DGB-37413>> accessed 27 December 2023.

¹⁴⁰ *ibid.*

¹⁴¹ Leswing Kif, 'Apple says it rejected almost 1 million new apps in 2020 and explains common reasons why' (CNBC, 11 May 2021) <<https://www.cnbc.com/2021/05/11/apple-rejected-nearly-1-million-new-apps-in-2020-heres-why.html>> accessed 27 December 2023.

¹⁴² Palfrey and Gasser, 15.

with them.¹⁴³ A famous example in this regard is the Microsoft case. In this judgement, the US Federal Trade Commission found that by altering the Java programming language, the technology giant harmed competition as it allowed Microsoft to exclude the use of platform-independent applications, thus enabling it to lockout (potential) competitors whilst strengthening its own market position.¹⁴⁴ This case, therefore, demonstrates how important interoperability is for new entrants and, at the same time, how powerful the exclusion of interoperability is in raising barriers to entry. Accordingly, guaranteeing interoperability is indispensable for fostering a pluralistic innovation environment.

3. Kill Zones

A fact that further adds to the high entry barriers is that depending on what market start-ups want to enter, they may not easily find investors due to the presence of so-called 'kill zones'. The term 'kill zone' refers to the risk new entrance may face in a product market where large technology firms, like GAFAM, are already actively acquiring young and innovative companies.¹⁴⁵ Wenger—a managing partner at Union Square Ventures and an early investor in Twitter—found, for instance, that “the scale of these companies [GAFAM] and their impact on what can be funded, and what can succeed, is massive.”¹⁴⁶ He added a quote from an investor stating that he only invests “in things that are not in Facebook’s, Apple’s, Amazon’s or Google’s kill zone.”¹⁴⁷ Along similar lines, Kamepalli, Rajan and Zingales established that even in cases where no traditional anti-competitive actions take place, the reduction in prospective pay-offs to nascent companies creates kill zones. At a more granular level, their analysis shows that venture capital investments¹⁴⁸ decreased by 46% in areas where fledgling companies are being acquired in a specific market by Meta or Alphabet. The number of deals was further reduced by more than 20% in the

¹⁴³ For more information on the importance of interoperability in digital markets, see CERRE Interoperability Report, 1–53.

¹⁴⁴ See *United States v Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001).

¹⁴⁵ Kamepalli, Rajan, and Zingales, 2.

¹⁴⁶ Wenger Albert, citation found in Schechter Asher, ‘Google and Facebook’s “Kill Zone”: “We’ve Taken the Focus Off of Rewarding Genius and Innovation to Rewarding Capital and Scale” (Promarket, 25 May 2018) <<https://www.promarket.org/2018/05/25/google-face-books-kill-zone-weve-taken-focus-off-rewarding-genius-innovation-rewarding-capital-scale/>> accessed 27 December 2023.

¹⁴⁷ *ibid.*

¹⁴⁸ Venture capital refers to a form of private equity. Their role will be discussed in more detail below, see [Part II: Chapter I: A. 2.3](#).

three years following the transaction.¹⁴⁹ Accordingly, if large incumbents have set foot in a market, investors may see no opportunity to compete with the might of leading firms. As a result, investors may think twice before funding a nascent firm which aims to challenge the prevailing value chain of the leading technology company, creating a significant entry barrier for such companies.

¹⁴⁹ Kamepalli, Rajan, and Zingales, 2 et seq.

Chapter 3: Introduction to Competition Law and Merger Control

Having introduced the most important terms and created a comprehensive overview of the functioning of digital markets, the remit of this chapter is to specify the functioning, goals and values of competition law and merger control, respectively, the understanding of which is indispensable for the subsequent discussions of the economic and legal effects of killer acquisitions.

A. Benefits of Competition

At the outset, it should be briefly explained why competition is generally viewed to be beneficial and therefore considered worth protecting. To this end, it may be important first to understand the term ‘competition’.

In a nutshell, competition refers to “a process of rivalry between firms seeking to win customers’ business over time by offering them a better deal”.¹⁵⁰ Competition creates an environment wherein companies operate on a level playing field and strive to attract as many consumers as possible. Consequently, this can bring about lower prices, greater efficiencies, improved products or services, more innovation and a wider choice for consumers. This is because undertakings operating in a competitive environment may generally be willing to render their offerings as attractive as possible to stand out from the competition.¹⁵¹

B. Function of Competition Law

Given the benefits the presence of competition can have, increasingly more jurisdictions around the globe have introduced competition laws over the last decades.¹⁵² In turn, this raises the question of what the function of competition

¹⁵⁰ UK Merger Assessment Guidelines (CMA129) 2021, para. 2.2. Note that the European Commission does not define the term ‘competition’ in either its Horizontal Merger Guidelines or its Non-Horizontal Merger Guidelines.

¹⁵¹ See EC, ‘Glossary of summaries’ <<https://eur-lex.europa.eu/EN/legal-content/glossary/competition.html>> accessed 27 December 2023; see also Whish and Bailey, 6.

¹⁵² See, for instance, OECD (2020c), 3, finding that over the past 50 years, the number of competition law regimes has increased more than tenfold.

law is in the first place. Elaborating on this question is thereby important as, depending on what competition law seeks to protect, i.e., what societal aim it tries to achieve in and for society,¹⁵³ it needs to be drafted accordingly.¹⁵⁴ In the context of the EU, competition law's function is closely related to the broader goals of the EU.

EU law is generally defined by a complex plurality of intertwined goals and values.¹⁵⁵ For instance, the Treaty on the European Union (TEU) stipulates that “[t]he Union is founded on the values of respect for human dignity, freedom, democracy, equality, the rule of law and respect for human rights, including the rights of persons belonging to minorities. These values are common to the Member States in a society in which pluralism, non-discrimination, tolerance, justice, solidarity and equality between women and men prevail.”¹⁵⁶ Moreover, the Treaty on the Functioning of the European Union (TFEU) states that “[t]he Union shall ensure consistency between its policies and activities, taking all of its objectives into account,”¹⁵⁷ including equality considerations, social protection and consumer protection.¹⁵⁸ Accordingly, the EU pursues a social market economy policy, the goal of which is to correlate entrepreneurship with social balance and market competition.¹⁵⁹

This broader context also informs how competition law is used in the EU: it is characterised by various goals and values, ranging from consumer welfare and efficiency to fairness and effective competitive structure, which individually contribute to the wide variety of ideas and objectives defined by the EU.¹⁶⁰ As will be explained in more detail below, whilst all these goals and values are considered, in the context of merger control, a special emphasis is put on consumer welfare and efficiency.¹⁶¹ But before saying more, it is important to first introduce the reader to the function of merger control.

¹⁵³ Note that law is generally an instrument to achieve a certain societal aim. When discussing the goal of law, one can distinguish three different modes of legal orders, that is, repressive law, autonomous law, and responsive law. Within this thesis, these different modes will not be further analysed as this would exceed its scope. For more information on this topic, see, for instance, Nonet, Selznick and Kagan.

¹⁵⁴ Clapham, 131.

¹⁵⁵ A comprehensive overview is provided in Ezrachi's research paper on the goals of EU competition law in the digital economy, see Ezrachi.

¹⁵⁶ Art. 2 TEU.

¹⁵⁷ Art. 7 TFEU.

¹⁵⁸ Art. 8, 9 and 12 TFEU.

¹⁵⁹ Ebner, 216.

¹⁶⁰ Ezrachi, 3 et seq.

¹⁶¹ For more information, see [Part I: Chapter 3: C. 3.](#)

C. Function of Merger Control

Given that this thesis focuses on merger control, it is worth understanding its importance, features and how the assessment of mergers and acquisitions (M&A) has evolved in the EU.

1. Importance of Merger Control

Every year, companies across the globe spend trillions of euros on M&A,¹⁶² making them an integral part of every firm's corporate strategy.¹⁶³ In many cases, M&A can significantly increase productivity and efficiency, as well as improve market structures and conditions. For instance, Disney's acquisition of Pixar's advanced animation technology for \$7.4 billion in 2006 allowed the multinational entertainment and media conglomerate to create considerable value by developing new and better movies,¹⁶⁴ ultimately benefiting consumers. Another example is Google's acquisition of Android: when Google purchased Android for approximately \$50 million in 2005, it enabled Google to become an effective rival to Apple's breakthrough innovation with the iPhone.¹⁶⁵ Hence, M&A have mostly been considered to contribute to the rise of more productive, innovative companies¹⁶⁶ and, consequently, have been broadly tolerated in most jurisdictions, including in the EU.

Notwithstanding these benefits deriving from M&A, the freedom to acquire or sell businesses is not unlimited. This is because certain transactions hold the potential to create or reinforce the market power of the merging parties,

¹⁶² See, for instance, Statista Research Department, 'Value of mergers and acquisition (M&A) transactions worldwide from 1985 to April 2023' (Statista, 22 May 2023) <<https://www.statista.com/statistics/267369/volume-of-mergers-and-acquisitions-worldwide/>> accessed 27 December 2023.

¹⁶³ For more information on this topic, see [Part II: Chapter 1: A](#).

¹⁶⁴ For more information, see The Walt Disney Company, 'Disney To Acquire Pixar' (The Walt Disney Company, 24 June 2006) <<https://thewaltdisneycompany.com/disney-to-acquire-pixar/#:~:text=This acquisition combines Pixar's preeminent,that can fuel future growth>> accessed 27 December 2023.

¹⁶⁵ For more information, see Callaham John, 'Google made its best acquisition nearly 17 years ago: Can you guess what it was?' (Android Authority, 13 May 2022) <<https://www.androidauthority.com/google-android-acquisition-884194/>> accessed 27 December 2023.

¹⁶⁶ Portuese Aurelien, 'Reforming Merger Reviews to Preserve Creative Destruction' (Information Technology & Innovation Foundation, 27 September 2021) <<https://itif.org/publications/2021/09/27/reforming-merger-reviews-preserve-creative-destruction>> accessed 27 December 2023.

thereby reducing competition.¹⁶⁷ For instance, M&A can lead to limited output, increased barriers to entry or reduced innovation. In other words, under certain circumstances, they can lead to an inefficient allocation of goods, as well as the inefficient use of factors of production.¹⁶⁸ Moreover, they may also disturb dynamic efficiencies, i.e., adversely affect the improvement of know-how, technological progress and the development and introduction of new goods.¹⁶⁹ By this virtue, competition authorities worldwide have developed merger control instruments that provide boundaries to such potentially harmful practices. In the EU, these boundaries are defined by the Merger Control Regulation, which was first enacted in 1990 and revised in 2004, resulting in the current Merger Control Regulation (EUMR), the *Council Regulation (EC) No 139/2004*.¹⁷⁰

2. Features of the EU Merger Control

By setting forth specific standards to assess the competitive effects of mergers on the internal market of the EU, the current EUMR provides a powerful tool for the European Commission to stop potentially harmful transactions in their entirety. In other words, the EUMR provides filtering mechanisms that help the Commission ascertain whether a transaction gives rise to competition concerns and thus needs to be subjected to an in-depth review.

Unlike the other pillars of competition law, that is, Art. 101 and 102 TFEU, the purpose of merger control is to preventively control structural changes.¹⁷¹ Accordingly, merger control is a forward-looking exercise that prevents competition from being impeded in the first place. Although the ex-ante aspect of merger control brings about many challenges as the transaction's effects on competition can be difficult to anticipate, it also constitutes a chance for competition authorities to prohibit a transaction that may otherwise have irreversibly harmed competition. After all, the main purpose of the EUMR is to ensure effective competition by promoting "low prices, high quality of products, a wide selection of goods and services, and innovation."¹⁷² By making sure that no anti-competitive mergers can take place, the EUMR is therefore essential to maintain competitive markets.

¹⁶⁷ Boyce and Lyle-Smythe, para. 8.230.

¹⁶⁸ For more information, see Schwalbe and Zimmer, 4–10.

¹⁶⁹ *ibid.*, 9–11.

¹⁷⁰ For more information on the history of EU merger control, see, for instance, Levy, 195–218; Körber in Immenga/Mestmäcker, Introduction paras. 15–27.

¹⁷¹ Körber in Immenga and Mestmäcker, Art. 2 EUMR para. 200.

¹⁷² EC, Horizontal Merger Guidelines, para. 8.

3. Evolution of the EU Merger Control Analysis

Having established the importance and features of EU merger control, it is crucial to shed light on the evolution of its main goals and values. This is indispensable to better understand the European Commission's approach when it comes to merger reviews.

Over the last decades, the Commission has increasingly shifted its focus from a more structural approach, whereby emphasising the protection of market structures, to a more economic-centric approach that allows it to put a stronger focus on consumer welfare and efficiency. To better appreciate this shift, which will be particularly crucial for the policy debate in Part IV, the following subsections introduce the Ordoliberal school of thought, which constitutes the very origins of the EU competition law and advocates a more formalistic stand, as well as the prevailing consumer welfare approach, which more strongly promotes an efficiency-oriented competition policy.

3.1. Origins of EU Competition Law

Although the influences of the Ordoliberal paradigm upon the development of the EU are not explicitly affirmed,¹⁷³ Ordoliberal teachings are clearly reflected in its socio-political goal.¹⁷⁴ Hence, the following subsections introduce the main ideas of Ordoliberals, which have also strongly influenced the early days of EU merger control.

a) *Ordoliberal School of Thought*

Ordoliberalism, also known as German neoliberalism, arose during Germany's political, economic and social crisis between the 1920s and the 1930s.¹⁷⁵ After the totalitarianism of the Nazi regime and the strong private economic power hallmarking the Weimar Republic, Ordoliberalism provided a new way of thinking about society.¹⁷⁶ It had as its primary aim to harmonise economic, political and legal discourses, thereby creating a new social order based on individual freedom.¹⁷⁷ Unfortunately, marked by the terrible events of the Second World War, Ordoliberalism has long been neglected in the literature and

¹⁷³ See Akman, 267–304.

¹⁷⁴ See [Part I: Chapter 3: B.](#)

¹⁷⁵ For more information on the historical background, see Heinemann (1989), 8–17.

¹⁷⁶ Gerber (1994) 35.

¹⁷⁷ See Eucken (2001), 9–11 and 17–20.

has often been misunderstood.¹⁷⁸ In fact, it has been widely used as a synonym to refer to an unworkable and inefficient paradigm that disqualifies decisions through its excessively formalistic or outdated nature.¹⁷⁹ However, these misconceptions fundamentally failed to recognise the competition-democracy nexus that lies at the heart of the Ordoliberal ideology,¹⁸⁰ which will be discussed in the following subsections.

aa) Role of Competition as a Value Itself

According to Ordoliberals, preserving competition is the only way to protect social and economic coordination from domination.¹⁸¹ In fact, they place their full confidence in competition law, referring to competition as the “most remarkable and ingenious instrument for reducing power known in history.”¹⁸² To them, competition allows autonomous and independent market players to coordinate their economic activities in a way that meets public needs and interests.¹⁸³ They argue that such a polycentric market structure that is featured by equality of power benefits consumers. This is because, by enabling different market players to participate in the competitive process, consumers are provided with more alternatives they can choose from and, simultaneously, are protected from the exposure of arbitrary power. Accordingly, Ordoliberals perceive competition as a mechanism of ‘anti-power’ which ensures the polycentric and decentralised coordination of economic plans.¹⁸⁴ Whilst acknowledging that market concentration could result from superior efficiency, they advocated that it is part of the economic and competition policy to prevent the emergence of monopolies by setting boundaries to industry concentration and company size, thereby managing the market structure and stimulating technological progress.¹⁸⁵

¹⁷⁸ Deutscher and Makris (2016), 202.

¹⁷⁹ Akman, 269; Lamadid Alfonso and Pablo Ibáñez Colomo, ‘Understanding Ordoliberalism’ (Chillin Competition, 11 September 2015) <<https://chillingcompetition.com/2015/09/11/understanding-Ordoliberalism/>> accessed 27 December 2023.

¹⁸⁰ See Deutscher and Makris (2016), 181–224.

¹⁸¹ See Böhm (1971), 234–236.

¹⁸² Böhm (1961), 279.

¹⁸³ See Mestmäcker, 35.

¹⁸⁴ Eucken (2001), 80; for more information on the importance of the freedom to compete, see also Böhm (1971), 233–262.

¹⁸⁵ Eucken (1950), 236–240.

By advocating a framework that is not merely functional for efficiency,¹⁸⁶ a particular characteristic of the Ordoliberal paradigm is that it does not consider the dynamic and allocative efficiency resulting from a competitive process quantitatively but rather looks at it as a valuable by-product.¹⁸⁷ Hence, Ordoliberals consider competition a value of its own, which extends beyond pure efficiency.¹⁸⁸ Böhm stated that “[t]he real motives behind the enactment of antitrust law were [...] not economic efficiency and the effectiveness of economic control, but social justice and civil liberties which were held to be threatened by monopolies.”¹⁸⁹ Instead of constraining the role of competition law to a purely economic aim, Ordoliberals consider the goal of achieving economic freedom to be much broader, also encompassing social and political values. Accordingly, unlike classic liberalism, which perceives the economy as a discipline that should be detached from law and politics, the Ordoliberal paradigm contains a socio-legal dimension.¹⁹⁰ Essentially, it considers the economy a fundamental means to promote a democratic and humane society where economic freedom, equality of opportunity and equal status of all market players can be guaranteed rather than just a vehicle to achieve economic objectives.¹⁹¹ Like a direct democracy whereby not the outcome but rather the freedom of speech is emphasised, Ordoliberals find the competition process more important than the result it produces.¹⁹²

bb) Role of the Protection of Economic Freedom

As mentioned in the previous subsection, Ordoliberals consider competition indispensable to guarantee the economic freedom of each individual. In fact, they do not perceive economic freedom as an individual's unrestricted right but rather condemn non-interference as one of the primary reasons for the decline of competition.¹⁹³ Therefore, they find the coordination of economic exchanges only beneficial if it does not involve any relationships of domination or subjugation. According to them, the mere presence of such economic power can distort the economic freedom of other market players. By creating a relationship of subordination where smaller companies and consumers are in-

¹⁸⁶ For a comprehensive summary on the topic in relation to European competition law, see also Felice and Vatterio, 147–157.

¹⁸⁷ Möschel (1989), 146.

¹⁸⁸ Sauter, 47.

¹⁸⁹ Böhm (1961), 28.

¹⁹⁰ See Gormsen, 9.

¹⁹¹ Gerber (2001), 241; Behlke, 38; Deutscher and Makris (2016), 185.

¹⁹² Andriychuk, 589–590.

¹⁹³ Miksch, 5–6; see also, for instance, Mestmäcker, 33–38.

creasingly dependent on the large firms, Ordoliberals view excessive market concentration as a threat to the process of competition which can negatively affect economic freedom and equality of opportunity.¹⁹⁴ After all, as found by Böhm, the concentration of economic power can create psychological domination—translated from the German ‘psychologisch begründete Verfügungsge-walt’—thereby inducing a submissive behaviour of other market participants.¹⁹⁵

For these reasons, particular emphasis is put on the promotion of equal freedom for all market players to pursue their economic activities without any dependency on dominant companies. The Ordoliberal paradigm, therefore, includes an egalitarian dimension by considering that all market participants shall enjoy equal economic freedom.¹⁹⁶ Economic inequalities should only reflect the differences in the economic performance of the market players as opposed to economic and political power due to a particular market position.¹⁹⁷

b) *Formalistic Approach Taken in the Early Case Law*

It is striking that in its early years, the European Court of Justice generally took a strong teleological approach to interpret EU competition law, which was heavily influenced by Ordoliberal thoughts and, consequently, by the protection of the competitive process itself. For instance, this becomes apparent when looking at the *Continental Can* case, where the European Court of Justice decided to interpret Art. 86 EEC Treaty¹⁹⁸ more broadly by finding the provision applicable to the acquisition of an undertaking by a dominant company.¹⁹⁹ It did so to protect the existing market structure from the creation of a monopoly which could have adversely affected competition in the market. Similarly, the Court of Justice’s concerns about protecting the market structure and economic freedom are also reflected in its decision against *United Brands*.²⁰⁰ In this case, it established the concept of ‘relative market power’²⁰¹ and found that a company’s refusal to supply, which held the potential to drive a rival out of the market, was sufficient to identify abuse of dominance. The Ordoliberal spirit is also evidenced in *Hoffmann La Roche*, where the Court found that binding consumers by means of an exclusive purchasing rebate

¹⁹⁴ See, for instance, Eucken (2001), 13–22; Miksch, 5–6.

¹⁹⁵ Böhm (1933), 275–276.

¹⁹⁶ Mestmäcker, 608.

¹⁹⁷ Böhm (1933), 257–262 and 271–272; Miksch, 38.

¹⁹⁸ Equalling Art. 102 TFEU, which is concerned about the abuse of market dominance.

¹⁹⁹ Case 6/72 *Europemballage Corporation and Continental Can Company*.

²⁰⁰ Case 27/76, *United Brands Company v Commission*.

²⁰¹ Gerber (2001), 368.

scheme would distort competition.²⁰² By ignoring any efficiency consideration in this case, the Court indirectly confirmed that it considered competition to constitute a value of its own.

Whilst these are just a few examples, it can be clearly deduced from them that initially, the jurisprudence of the European Court of Justice was deeply concerned with the protection of the competitive process, which led it to adopt a strong formalistic approach.

c) *Shift to the Consumer Welfare Standard*

This trend slowly started shifting in the mid-1980s-1990s,²⁰³ which was strongly influenced by the emergence of the Chicago School in the US. The Chicago School relies on a libertarian vision of the economy, considering any limitation of free trade as a violation of competition. Born in a time when competition law in the US was strongly influenced by the Harvard School of thought, which, similarly to Ordoliberalism, considers the presence of small companies and a competitive market structure containing many independent firms indispensable, the rise of the Chicago School provided a new way of thinking.²⁰⁴ By introducing the consumer welfare benchmark, according to which a merger should only be prohibited if it does not sufficiently benefit the consumers, the Chicago School has brought about a considerable change in competition law, also in the EU.²⁰⁵ This is because the new approach adopted by US competition enforcers led to increasingly conflicting decisions reached by the EU and the US authorities, which, among other things, became particularly evident in transatlantic mergers. One of the most prominent transactions in this regard was the merger between General Electric—a firm that, among others, was active in power systems and aircraft engines and transport systems²⁰⁶—and Honeywell International—a company mainly known for its aerospace products and services and its transport systems.²⁰⁷ Whilst General Electric was dominant on the market for large jet aircraft, Honeywell was

²⁰² Case C-85/76 *Hoffmann-La Roche & Co v Commission*.

²⁰³ Gerber (2001), 368.

²⁰⁴ For more information, see, for instance, Schmidt and Haucap, 14–16 (Harvard School) and 23–25 (Chicago School).

²⁰⁵ Probably the most famous proponent of the Chicago School is Bork. He argues that that consumer welfare should constitute the only goal of antitrust, see Bork (1978), 80–89. For more information on the economic assumptions underpinning the Chicagoan welfare model in general, see Bork (1978), 90–115; Posner, 21–29; Easterbrook (1984), 13.

²⁰⁶ Case COMP/M.2220 – *General Electric/Honeywell*, para. 3.

²⁰⁷ *ibid*, para. 4.

leading the market of avionics and non-avionics aerospace component markets.²⁰⁸ Based on these facts, the European Commission concluded, in a nutshell, that by allowing the transaction between General Electric and Honeywell, the parties would be able to strengthen their position of dominance, which in turn could raise the scope for exclusionary practices, such as tying, bundling or other forms of leveraging. Moreover, it found that the transaction could enable the parties to muscle out rivals, thereby strongly relying on structural considerations.²⁰⁹

The approach taken by the Commission stood in stark contrast to the assessment made by the Department of Justice in the US, mainly focusing on efficiencies and how they may enable the merging parties to lower their prices. These considerations led it to ultimately approve the transaction.²¹⁰

As a result of these conflicting decisions,²¹¹ the Commission faced a lot of criticism from the public for its approach taken in its merger assessment.²¹² Thereby, the core criticism revolved around its reliance on allegedly outdated economics in order to protect market integration. Among other things, it was viewed that the European Commission did not sufficiently take into account potential efficiencies resulting from the transaction.²¹³

Reflecting on these criticisms, Monti—the first economist to hold the position of European Commissioner for Competition between 1999 and 2004—was determined to introduce a ‘more economic approach’ to EU competition law and thus to “give the European Union’s cumbersome and complicated competition provisions a radical overhaul in order to bring them into holding with modern economic thinking.”²¹⁴ To this end, he introduced the term ‘consumer welfare’,

²⁰⁸ *ibid.*, paras. 84 et seq.

²⁰⁹ Case COMP/M.2220 – *General Electric/Honeywell*, paras. 341 et seq.

²¹⁰ See DOJ, ‘GE-Honeywell: The U.S. Decision’ (*The United States of Justice Department*, 29 Nov 2001) <<https://www.justice.gov/atr/speech/ge-honeywell-us-decision>> accessed 27 December 2023.

²¹¹ For more information on the different approaches taken in *General Electric/Honeywell* case, see, for instance, Grant and Neven, 595–633; Patterson and Shapiro, 18–26; Morgan and McGuire, 39–56; Witt, 14–18.

²¹² See, for instance, Varian Hal R., ‘Economic Scene; In Europe, G.E. and Honeywell ran afoul of 19th-century thinking’ (*The New York Times*, 28 June 2001) <<https://www.nytimes.com/2001/06/28/business/economic-scene-in-europe-ge-and-honeywell-ran-afoul-of-19thcentury.html>> accessed 27 December 2023; Becker Gary S., ‘What US Courts Could Teach Europe’s Trust Busters’ (*Business Week*, 6 August 2001), 6.

²¹³ See Witt, 17–18.

²¹⁴ Monti, 2. For more information on the more economic approach in EU antitrust law in general, see Witt.

which brought substantive changes to the competition assessment. In fact, it eventually led to the enactment of the current *Regulation 139/2004*, which more strongly focuses on the question of whether a merger significantly impedes competition by increasing prices, reducing output, choice or quality of goods or services than its predecessor.²¹⁵ This links directly to the next subsection, where the understanding of the consumer welfare approach taken in the EU will be deepened.

3.2. Consumer Welfare Approach

The main idea of the welfare approach is that competition is not an end in itself but an instrument for increasing welfare. The following subsection will explain in more detail what this means in the context of merger control.

a) Definition of Consumer Welfare

Originally, the concept of ‘consumer welfare’ stems from economics²¹⁶ and constitutes a tool to determine how efficient a market is as a whole.²¹⁷ According to the OECD, “consumer welfare refers to the individual benefits derived from the consumption of goods and services.”²¹⁸ Due to the challenges obtaining the required information about the consumers’ preferences would pose, the common practice is, however, to employ the notion of consumer surplus,²¹⁹ referring to what consumers get from purchasing a product or service.²²⁰ Hence, consumer surplus is often used as a synonym for consumer welfare and can be defined as “the excess of social valuation of product over the price actually paid.”²²¹ In other words, it describes the difference between what consumers would be willing to pay for a product or service and what they eventually pay.²²²

²¹⁵ Witt, 136, noting that “[i]n the cases of *GE/Honeywell* and *Tetra Laval*, for example, the Commission had considered the likely exclusion of competitors sufficient to make the merger anticompetitive, and had not examined the likely effects on consumers. This had been the key bone of contention between the EU and US antitrust authorities in the dispute over the ill-fated *GE/Honeywell* merger.” For more information on the evolution of the EU Merger Control after the *General Electronics/Honeywell* case, see also Weitbrecht and Flanagan, 294–302; Inyang, 1–18.

²¹⁶ Albæk, 70.

²¹⁷ Motta, 18.

²¹⁸ OECD Glossary, 29.

²¹⁹ *ibid.*

²²⁰ Albæk, 70.

²²¹ OECD Glossary, 28.

²²² Albæk, 70.

b) *Underlying Economic Assumptions*

The concept of consumer welfare is based on the neo-classical economic theory, which explains that the maximisation of social welfare is achieved under conditions of perfect competition. Perfect competition is a theoretical market structure model that is underpinned by the following assumptions: (i) agents, such as firms, consumers and investors, solve well-defined problems by using perfectly rational logic, (ii) they have all the relevant information related to a choice or action and (iii) the aggregate outcome is consistent with the agents' behaviour, thereby creating a perfect equilibrium.²²³ Based on these assumptions, perfect competition looks at how product and allocative efficiencies can be maximised, i.e., how goods and services can be produced at the lowest possible cost and how they are allocated according to their most efficient use so that they lead to the maximisation of the general wealth of society.²²⁴ The main idea behind perfect competition is that it leads to a social optimum²²⁵ and maximises consumer welfare.²²⁶

c) *Different Standards*

Departing from these economic assumptions, proponents of the welfare standard greatly emphasise economic efficiency, that is, increasing output and reducing prices. The traditional consumer welfare standard is therefore based on the premise that competition policies should exclusively focus on the decrease of conduct that reduces or is likely to reduce economic welfare rather than taking into account non-economic harms, such as social or political objectives.²²⁷ Accordingly, advocates of the traditional understanding of the consumer welfare standard interpret competition law in a utilitarian manner, meaning that competition serves as “a means to an end” and is only worth protecting if it leads to efficiency. Note, however, that there exist various forms of consumer welfare standards. Some proponents advocate, for instance, a more

²²³ Schwalbe and Zimmer, 14 et seq.; Arthur (2021), 137–138.

²²⁴ For a more detailed description of product and allocative efficiency, see Schwalbe and Zimmer, 4 et seq.; Whish and Bailey, 7–8.

²²⁵ Cseres, 124 et seq.

²²⁶ Künzler, 80 et seq.; Künzler and Zäch, 541–555.

²²⁷ For instance, Bork discards any policy goals for antitrust law other than welfare maximisation. Accordingly, he strongly opposes the idea of considering non-economic goals, such as the protection of the competitive process or economic freedom, see Bork (1967), 252–253. Similarly, Posner finds that non-economic goals, such as the recognition of small businesses, should not be taken into account by antitrust law, see Posner, 24–28.

inclusive standard that also considers non-economic interests.²²⁸ As highlighted by Blair and Sokol, “the divide is between different visions of competition—one based exclusively upon industrial organization economics versus a mix of industrial organization economics and noneconomic political goals.”²²⁹ Accordingly, the extent to which non-economic interests should be included in EU competition law is highly controversial.

²²⁸ See, for instance, Claassen and Gerbrandy, 1–15.

²²⁹ Blair and Sokol, 2510. Note that there exists also a controversial regarding the question of whether the welfare standard shall only encompass consumer welfare or whether total welfare should be considered. This will, however, not be further discussed within this thesis. For more information on the distinction between consumer and total welfare, see Schwalbe and Zimmer, 11–14; Orbach, 133–164, Williamson (1968), 18–36; Markovits, 41–87; Cseres, 121–173; Heyer, 29–54; Farrell and Katz, 3–33.

Summary

Digital markets are characterised by a number of features, such as network and tipping effects and immense returns to scale and scope.²³⁰ These characteristics are neither new nor unique to digital markets, as they are also witnessed in other network industries.²³¹ Nevertheless, it is indisputable that the combination of the different characteristics makes digital markets highly complex and difficult to understand fully.²³² Over the last decades, it has been increasingly witnessed that their features generally favour highly concentrated markets which enable large incumbents to build ecosystems around them. This has also affected the very understanding of competition law since, as stated by Vestager herself, “the biggest threat [...] comes from platforms that are not just a single business, but the center of large empires.”²³³ These changes raise major competition concerns since the occurrence of such large webs of interactions allows companies operating at the centre of the ecosystem to benefit from various advantages over subsequent entrants, thereby gradually raising entry barriers for potential new entrants whilst settling into a more stable market structure. This has the consequence that nascent companies operating in the digital economy tend to initially avoid competing directly with incumbents and instead more commonly enter fringe markets. By doing so, they compete for the market rather than in the market. After all, as put by Ezrachi and Stucke, “they’re most likely to survive in fighting over the scraps by Tech Barons than in challenging them.”²³⁴ In turn, this raises the question of how the fact that digital markets are characterised by competition for the market rather than in the market affects the incentives of nascent firms and incumbents to engage in M&A and what this means concerning killer acquisitions. This links directly to the next Part, where these questions will be addressed.

²³⁰ See [Part I: Chapter 2: A](#).

²³¹ For instance, similar characteristics are also witnessed in the telecom or energy industry.

²³² See, for instance, EC Report, 52 and 126, where Cr  mer, de Montjoye and Schweitzer acknowledge that digital markets are not yet fully understood. See also Picht (2019), 789–791, highlighting how digital transformation challenges existing frameworks of society.

²³³ Vestager Margrethe, ‘Conference on Competition and the Digital Economy’ (OECD Conference Centre, 3 June 2019).

²³⁴ Ezrachi and Stucke (2022), 83.

Part II:

Economic Analysis

Chapter 1: Dynamics Between Nascent Companies and Incumbents

As already highlighted in the introduction of this thesis, nascent companies are considered a driving force behind competitive markets. By bringing new ideas, processes and innovative products and services to markets,²³⁵ they pressure established firms to stay competitive. Whilst reducing concentration within markets,²³⁶ fledgling companies also ensure that existing market players either improve or exit the market if they fail to meet consumers' ever-changing needs. Put differently, by creating an 'ever-present threat', they both discipline and constrain incumbents' conduct.²³⁷ At the same time, recent trends in digital markets show that start-ups have become increasingly willing to sell their companies at an early stage. Accordingly, instead of inventing an innovation that could potentially grow big and challenge the existing power structures of leading firms, nowadays, many start-ups seek to be acquired at a certain point. In fact, it seems that acquisitions have become a common means to shift innovation risk from investors and founders to large firms.²³⁸ What is referred to as 'entry for buyout' in the economics and management literature²³⁹ has, therefore, often become the rule rather than the exception in digital markets. Indeed, as many entrepreneurs are driven by the opportunity to sell their business to an incumbent, acquisitions have become an inherent part or even an end goal of nascent firms' exit strategies.²⁴⁰ To some extent, it seems that what used to be "the last resort of a failing firm to prevent bankruptcy" nowadays reflects "success rather than failure."²⁴¹

In turn, this raises the question of what drives incumbents and start-ups to acquire and sell, respectively. Hence, this chapter aims to create a comprehensive overview of the driving motives that make incumbents and nascent firms engage in M&A, thereby laying the basis for the subsequent more in-depth economic analysis of killer acquisitions.

²³⁵ OECD (2010), 32.

²³⁶ Provided that nascent companies do not get acquired at an early stage.

²³⁷ Schumpeter (1950), 85.

²³⁸ Mandel and Carew, 4.

²³⁹ See, for instance, Rasmusen, 281–299.

²⁴⁰ For more information, also see Lemley and McCreary, 8–9 and 63–64.

²⁴¹ Buenstorf, 830.

A. Motives of Acquiring and Getting Acquired

It is no secret that M&A form a core element of corporate strategy and can have a decisive impact on a company's development and growth. This is because they allow companies to increase value for their shareholders,²⁴² for instance, by leveraging various types of synergies, eliminating inefficiencies or reducing the number of potential competitors that could destabilise their existing business. Given the wide range of benefits that M&A can bring, it is also not unusual for various transactions to be planned and pursued simultaneously or contemporarily.²⁴³ These benefits are, however, not limited to acquirers but also extend to target companies. For instance, by allowing selling firms to profit from the purchaser's vast resources and experiences whilst eliminating risks of failing, M&A have also become an integral part of start-ups' lifecycles. Based on these observations, the following sections seek to deepen the understanding of the motivations for incumbents and start-ups to engage in such transactions.

1. Motivations for Acquiring a Nascent Company

The fast pace and ever-shortening lifecycles of innovation in digital markets make long-term success difficult. They require companies to recognise and develop new rising technology trends quickly enough in order to continuously satisfy ever-changing customer needs and requirements.²⁴⁴ Accordingly, if a company wants to thrive in the highly dynamic environment of digital markets, it needs to be able to quickly build, integrate and reconfigure internal and external assets and effectively avert potential threats. M&A in this sector are, therefore, mainly motivated by an interplay of (i) the fast-changing environment, (ii) the challenges of developing technologies and capabilities and (iii) the importance of recognising potential threats early enough. In this regard, it is not surprising that they have become an integral part of the growth strategy of any technology company that seeks to succeed. Well-trodden examples include Facebook's acquisition of WhatsApp and Instagram, Google's purchase of Waze and DoubleClick, Amazon's acquisition of Zappos and Quidsi and the merger between Microsoft and GitHub.

²⁴² Kim, Halebian and Finkelstein, 26 et seq.

²⁴³ More information on the effects of so-called 'acquisition programs'—referring to a "group of acquisitions driven by a core business logic, often with significant interdependencies"—can be found in Schipper and Thompson, 85–119.

²⁴⁴ Chaudhuri and Tabrizi, 123–130; see also [Part I: Chapter 2: A. 4.](#)

There are many different theories about what drives companies to merge with or acquire other entities.²⁴⁵ Although there exists no consensus as to which factors have the most significance, it can be said that “mergers are driven by a complex pattern of motives”.²⁴⁶ In general, a particularly important motive to engage in M&A is to create value. According to Halebian et al., value creation through M&A is generally motivated by four forces, namely (i) market power, (ii) efficiency, (iii) market discipline and (iv) resource deployment,²⁴⁷ which will be discussed individually in the subsequent subsections. In addition, this thesis will consider ‘acqui hiring’, describing the use of acquisitions to hire people, which is a motive commonly mentioned in the context of killer acquisitions.

1.1. Market Power

It is well-known that companies generally strive for a common goal: to maintain and strengthen their market power. The higher the market power of a company, the more negotiation power it has and the more it can raise prices—be it the price offered to the consumers or, as probably more common in the digital sector, the prices to be paid by attention seekers, like advertisers.²⁴⁸

A common tool utilised by large technology firms to defend or strengthen their market position is strategic expansion. To this end, they can, for instance, invest internally in developing new products or services to facilitate entry into new markets. Such a strategy often comes with the advantage of being cheaper. Alternatively, companies can also acquire another firm to benefit from its network or gain, for instance, innovation competencies, market coverage and/or to simply reduce the number of existing or potential future competitive threats, which is particularly important in the context of killer acquisitions. An illustrative example in this regard is provided by Waze. In 2013, Google purchased the navigation app for \$966 million, \$847 million of which the search giant apparently spent in goodwill.²⁴⁹ However, after the company was acquired, the role of Waze changed from being a potential dis-

²⁴⁵ See, for instance, Mandelker, 303–335; Lubatkin, 218–225; Trautwein, 283–295; Morck, Shleifer and Vishny, 31–48; Berkovitch and Narayanan, 347–362.

²⁴⁶ Trautwein, 283.

²⁴⁷ Halebian et al., 472–475.

²⁴⁸ [Part I: Chapter 2: A. 5.](#)

²⁴⁹ Kerr Dara, ‘Google reveals it spent \$966 million in Waze acquisition’ (CNET, 25 July 2013) <<https://www.cnet.com/tech/services-and-software/google-reveals-it-spent-966-million-in-waze-acquisition/>> accessed 27 December 2023.

rupter to a complementor.²⁵⁰ In fact, Waze's CEO left Google in 2021, stating that "I was the naïve start-up leader believing that I can build out Waze within Google to its full potential and conquer the beast, regardless of its nature. This irrational belief is critical for a start-up leader but challenging in the corporate environment."²⁵¹ Put differently, instead of further pushing Waze to become a disrupter, Google merely integrated distinguishing features into Google Maps, such as speed traps, traffic slowdowns and real-time user reports on crashes.²⁵² Accordingly, this transaction allowed Google to improve its existing product whilst making sure that Waze would not become a threat, thereby also preventing another large technology company from acquiring it.²⁵³ This example, therefore, shows that inorganic growth through acquisitions is not necessarily only a way to increase enterprise value but also an effective means to suppress potential future threats.

1.2. Efficiency and Market Discipline

Another motive for companies to purchase other firms is that it enables them to generate net gains through synergies, such as financial, operational or managerial synergies, thereby eliminating potential inefficiencies.²⁵⁴ Synergies refer to the value and performance increase achieved through combining two or more businesses compared to the sum of their stand-alone value. They allow intangible assets to become cheaper and reduce costs, for instance, of advertisements or R&D investments.²⁵⁵ Besides traditional synergies, M&A can also create valuable data synergies which enable the acquirer to target new customers better and improve its ability to predict new trends.²⁵⁶ This applies irrespective of whether or not the target's product or service is eventually being 'killed' as the incumbent can typically use the data across its ecosystem. If the product in question is not discontinued post-transaction, acquisitions can

²⁵⁰ Ezrachi and Stucke (2022), 89.

²⁵¹ Bardin Noam, 'Why Did I Leave Google or, Why Did I Stay So Long?' (*LinkedIn*, 14 August 2021) <<https://www.linkedin.com/pulse/why-did-i-leave-google-stay-so-long-noam-bardin>> accessed 27 December 2023.

²⁵² Kelleher Suzanne Rowan, 'Did Google Just Deliver a Death Blow to Waze?' (*Forbes*, 21 October 2019) <<https://www.forbes.com/sites/suzannerowankelleher/2019/10/21/did-google-just-deliver-a-death-blow-to-waze/>> accessed 27 December 2023.

²⁵³ Ezrachi and Stucke (2022), 89.

²⁵⁴ Chatterjee, 120.

²⁵⁵ Williamson (1975).

²⁵⁶ See also [Part I: Chapter 2: A. 5.](#)

additionally facilitate the creation of consumption synergies by allowing the merging companies to link their products or services, eventually enabling the acquirer to create or enlarge its current product and service portfolio.²⁵⁷

1.3. Resource Development

Another interesting motive for M&A is the asset or capability transfer that can result from a transaction. Depending on the complementary nature of the resources of the merging parties, M&A can contribute to economies of scope.²⁵⁸ This is especially the case where the acquired company brings along valuable intellectual property or software, allowing the purchaser to avoid going through immense and lengthy legal work to obtain them. For instance, Google's acquisition of Wildfire—a social media marketing application developer—enabled the big technology firm to greatly benefit from the target's software as it contributed to better managing its social media presence.²⁵⁹ By the same token, thanks to the acquisition, the search giant did not have to continue its own potential efforts to develop similar software and go through the cumbersome process of obtaining patent protection. Instead, it could simply integrate the acquired software. A key motivation for acquisitions in the digital economy is, therefore, the intention to purchase innovative external technologies to complement internal R&D efforts and strengthen technological capabilities.²⁶⁰

1.4. Acquihring

Last but not least, large technology companies sometimes claim to use acquisitions as a hiring method to get the target's founder team and employees in order to “satisfy their [the acquiring company's] demand for engineering tal-

²⁵⁷ For more information, see Koca, who developed a model where an ecosystem company provides two products, namely a base and a category product, and where the firm can invest in increasing the complementarity between these products, thereby 'linking' them together. In her model, she shows that the ecosystem is a monopolist for the base product market but needs to compete against rival single-product companies in the market for the category product. Note that the summary of her findings was taken from Bourreau and de Stree (2019), 11.

²⁵⁸ See also [Part I: Chapter 2: A. 6.](#)

²⁵⁹ Edwards Jim, 'Google Is Winding Down Wildfire, The Social Media Platform It Bought For \$350 Million' (*Business Insider*, 14 March 2014) <<https://www.businessinsider.com/google-ends-wildfire-2014-3?r=US&IR=T>> accessed 27 December 2023.

²⁶⁰ Andersson and Xiao, 273.

ent”²⁶¹—a phenomenon that is commonly referred to as ‘acquihring’ in the literature. For instance, during a speaking engagement at Y Combinator’s Startup School in 2010, Zuckerberg stated, “Facebook has not once bought a company for the company itself. We buy companies to get excellent people.”²⁶² Similarly, the Director of Economics at Google, Fabien Curto Millen, stated that “[acquisition] is about getting an innovation group of people, who have [a] proven track record of working and innovating together and bring them into space”.²⁶³ Indeed, the empirical study conducted by Ouimet and Zarutski confirms that hiring through acquisition is a common motive for M&A.²⁶⁴

One of the primary reasons companies engage in acquihring strategies is that they generally enable the acquiring companies to avoid costly and timely friction in the labour market.²⁶⁵ Moreover, acquihring allows the purchaser to offer the acquired employees better deals which could otherwise disrupt the existing salary structures and lead to resentment among existing employees.²⁶⁶ Acquihring is also an efficient tool for incumbents to establish a non-compete clause in the contracts of the acquired employees, allowing the purchaser to make sure that the employees cannot compete with the incumbent for a determined number of years—typically three to four years—after leaving the firm.²⁶⁷ Indeed, the market study conducted by the Federal Trade Commission revealed that out of the 616 transactions scrutinised, 76.7% included non-compete clauses for both founders and key employees of the target firm. It further found that higher-value transactions were more likely to involve non-compete clauses.²⁶⁸ Accordingly, acquihring seems like a valuable tool to restrict employee mobility, thereby keeping potential threats in check (at least for a while).

Speaking of keeping potential threats in check, acquihring can also be a way to pre-empt potential future threats. After all, even if they ‘only’ involve employees, they usually lead to the closure of the nascent firm post-transaction. For instance, after Facebook acquihring the team of the musical selfie app Eye-

²⁶¹ Coyle and Polsky, 284.

²⁶² Zuckerberg Mark, ‘Why Facebook buys start-ups’ (Youtube, 18 October 2010) <<https://www.youtube.com/watch?v=OIBDyItD0Ak>> accessed 27 December 2023.

²⁶³ Curto Millen Fabien, ‘Controlling Pre-Emptive Mergers: In Need of a New Approach?’ (CRESSE Conference, Competition Policy International, 2020).

²⁶⁴ Ouimet and Zarutskie, 1–38; see also Kim, 1–42.

²⁶⁵ Kim, 8.

²⁶⁶ Coyle and Polsky, 323.

²⁶⁷ *ibid.*, 315.

²⁶⁸ FTC Study, 21.

groove, the latter announced that it would shut down its app.²⁶⁹ Accordingly, this example demonstrates that acquiring can also be a valuable instrument to pre-empt potential threats at an early stage. Competition authorities must therefore pay close attention to transactions where acquiring is a stated motive.

2. Motivations for Being Acquired

Having established incumbents' motivation to engage in M&A, it is worth looking at start-ups and their preferred exit strategy.

2.1. Benefitting from Infrastructure and Resources

As already touched on in the introduction of this chapter, by competing for the winning idea, nascent firms and their investors often hope to get rewarded by being purchased by a large company one day, which usually integrates the technology in ways that would probably be very difficult, if not impossible, for fledgling firms. This is because although nascent companies are generally better at developing breakthrough innovations, large firms are more effective at managing economies of scope and scale, thus improving the performance of their inventions.²⁷⁰ Hence, provided the start-up is not killed post-transaction, having the backing of an incumbent usually brings along many advantages, including access to better infrastructure, more resources and larger networks. Moreover, they commonly speed up growth, thus helping products or services to be marketed more efficiently.²⁷¹

2.2. Escaping Uncertainty and Potential Imitation Threats

An additional benefit resulting from selling at an early stage, as opposed to running the risk of commercialising independently, is that start-ups do not have to face the constant (financial) uncertainty of whether or not their invention will eventually succeed. Considering that approximately three out of four

²⁶⁹ Perez Sarah, 'Facebook snatches up team from Eyegroove, a musical selfie app' (TechCrunch, 5 August 2016) <<https://techcrunch.com/2016/08/05/facebook-snatches-up-team-from-eyegroove-a-musical-selfie-app/>> accessed 27 December 2023.

²⁷⁰ Kleer and Wagner, 74.

²⁷¹ OECD (2020a), 33.

companies fail, selling one's company at an early stage—ideally for an attractive price—often seems like a good exit strategy for founders and investors.²⁷²

The incentives to sell are further amplified by the fact that, by accepting a deal instead of turning it down, nascent firms can protect themselves from becoming victims of aggressive 'sell or be ruined' strategies that aim to coerce small firms to sell their businesses. This is, for instance, precisely what happened to the e-commerce company Quidsi—a former competitor of Amazon. After rejecting the technology giant's offer, Amazon cut the prices so low in the respective markets that Quidsi was eventually forced to sell its business.²⁷³ Amazon applied a similar strategy to the online shoe and clothing retailer Zappos. When the up-and-coming firm started threatening Amazon's position in the shoe market, the incumbent began to sell shoes at such a low cost that Zappos was eventually forced to sell out by merging with Amazon.²⁷⁴

In addition, when start-ups refuse to accept an offer from a large technology firm, the former must expect that the established company may try to replicate and improve an innovation that is not fully protected by intellectual property rights.²⁷⁵ Typically, such imitation attacks occur where (i) duplication costs are small, (ii) variable costs are low or (iii) the incumbent's survival simply depends on it.²⁷⁶ Snapchat provides an illustrative example: ever since it turned down Facebook's offer to buy the firm for \$3bn in 2013, the latter seems to have been on a mission to copy the successful sharing app to death.²⁷⁷ Indeed, when Facebook launched Instagram Stories in August 2016, it cut Snapchat's growth from 17% per quarter to it eventually losing users.²⁷⁸ Al-

²⁷² Gage Deborah, 'The Venture Capital Secret: 3 Out of 4 Start-Ups Fail' (*The Wall Street Journal*, 20 September 2012) <<https://www.wsj.com/articles/SB10000872396390443720204578004980476429190>> accessed 27 December 2023.

²⁷³ Petit, 13–14.

²⁷⁴ Teachout, 50. Note that such predatory pricing strategies can fall within Art 102 TFEU. They will, however, not be further scrutinised within this thesis as otherwise this discussion would exceed its scope.

²⁷⁵ Teixeira Thales S., 'A Survival Guide for Startups in the Era of Tech Giants' (*Harvard Business Review*, 21 February 2020) <<https://hbr.org/2020/02/a-survival-guide-for-startups-in-the-era-of-tech-giants>> accessed 27 December 2023.

²⁷⁶ OECD (2020a), 32.

²⁷⁷ Solon Olivia, 'Genius or hubris? Why turning down Facebook may be Snapchat's big mistake' (*The Guardian*, 15 July 2017) <<https://www.theguardian.com/technology/2017/jul/15/facebook-buy-snapchat-offer-mistake>> accessed 27 December 2023.

²⁷⁸ Constine Josh, 'Snapchat launches Scan, its AR utility platform' (*TechCrunch*, 4 April 2019) <<https://techcrunch.com/2019/04/04/snapchat-scan-platform/>> accessed 27 December 2023.

though the technology giant could not push Snapchat out of the market, not every nascent firm may want to fight such a battle.

2.3. Incentives to Make Quick Wins

In addition to the aforementioned factors, another important reason for start-ups' motivation to get acquired is that, compared to the alternative exit routes, it is often simply more lucrative and less risky for investors and founders to exit the market through M&A. In fact, in the annual US Start-up Outlook 2019 issued by the Silicon Valley Bank, it was found that half of the privately-owned start-ups indicated that their goal was to be acquired by a large company.²⁷⁹

A crucial factor contributing to this trend is the increasingly important role that VC—a sub-category of private equity—is attributed to in financing start-ups. VC companies are usually organised as limited partnerships that pool capital from multiple investors, such as pension schemes, wealthy individuals, insurance companies or institutional investors.²⁸⁰ These investors serve as precious funding sources for start-ups. Unlike investment banks and public equity firms, which are often bound by regulations and operational practices aimed at protecting retail investors, these investors are more willing to fund risky projects from start-ups and early-stage emerging firms that have limited or no operating history.²⁸¹ Their importance also reflects in statistics showing that between 2016 and 2019, VC investments more than doubled in Europe alone²⁸² and that between 2012 and 2022, the average monthly investments increased more than tenfold.²⁸³

²⁷⁹ Silicon Valley Bank, 'US Start-up Outlook: Key Insights from the Silicon Valley Bank Start-up Outlook Survey' (SVB, 2019) <https://www.svb.com/globalassets/library/uploaded-files/content/trends_and_insights/reports/startup_outlook_report/us/svb-suo-us-report-2019.pdf> accessed 27 December 2023.

²⁸⁰ Engelhardt and Gantenbein, 21 et seq.

²⁸¹ Baldridge Rebecca and Curry Benjamin, 'Understanding Venture Capital' (*Forbes Advisor*, 6 September 2022) <<https://www.forbes.com/advisor/investing/venture-capital/>> accessed 27 December 2023; see also Fiegler, 7; Duran and Farres, 99 et seq.; Zider, 131 et seq.

²⁸² Drosin Eric, '2019 Europe private equity activity hits highs, underlining commitment to European economy' (*Invest Europe*, 14 May 2020) <<https://www.investeurope.eu/news-opinion/newsroom/2019-europe-private-equity-activity-hits-highs-underlining-commitment-to-european-economy/>> accessed 27 December 2023.

²⁸³ Information retrieved from Crunchbase, 'Global funding to private companies in 2022' (Crunchbase, 2022) <https://www.crunchbase.com/lists/global-funding-to-private-companies-in/c8b397eb-904c-452b-bb48-1f806a8de7b2/funding_rounds> accessed 27 December 2023.

Given that in exchange for VC investors' financial aid, technical support and managerial expertise, incipient firms sell ownership stakes to them,²⁸⁴ start-ups are, at least to some extent, exposed to external determination. This has the consequence that they may have to opt for the exit strategies that bring about the highest short-term wins and the lowest risk. In turn, this may incentivise start-ups to opt for M&A since, compared to IPOs which typically occur only after six to eight years of a company's life, such transactions are commonly executed much earlier, thereby lowering the risk of failing in the meantime.²⁸⁵ Another important factor in this regard is that the additional time needed for an IPO does not usually come with sufficient added value to compensate VC investors for the longer investment horizon.²⁸⁶ Among other things, this is because, in M&A, the target company's value is usually calculated by multiplying its revenue,²⁸⁷ whilst firms are generally valued more conservatively based on cash flow or profits in IPOs.²⁸⁸ If, in addition to that, the incumbent is willing to pay a high premium because it recognises the nascent firm's innovation potential,²⁸⁹ start-ups may struggle to convince their investors of alternative exit routes.

These findings can be underpinned by a recent study revealing that companies which opt for an IPO are commonly controlled by founders who care less about monetary returns than other non-pecuniary factors, most notably to keep control over their company.²⁹⁰ Indeed, large companies like Google, Facebook and Snapchat all turned down attractive purchasing deals at some point. For instance, in 2006, Yahoo offered Facebook to acquire the then-money-los-

²⁸⁴ Baldridge Rebecca and Curry Benjamin, 'Understanding Venture Capital' (*Forbes*, 8 June 2023) <<https://www.forbes.com/advisor/investing/venture-capital/>> accessed 27 December 2023; see also Duran and Farres, 99 et seq.; Fiegler, 7.

²⁸⁵ Ibrahim, 12.

²⁸⁶ Lemley and McCreary, 34.

²⁸⁷ In this regard, see also Becker, Clement and Nöth, 5925, who refer to M&A like Facebook's \$1 billion deal to acquire Instagram and, for the same sum, the transaction between Yahoo and Tumblr. Interestingly, these acquisitions took place despite both start-ups losing money at the time of the transaction.

²⁸⁸ See also Folus and Boutron, 220, stating that "the buyer often agrees to pay the value of strategic options embedded in the target price, hoping for a higher future operating cash flow from the target, and thus paying a higher present value for it. Therefore, the trade sale usually commands the highest sale price."

²⁸⁹ As found by an economist in 1999, "Companies like Cisco, Intel, and Microsoft recognize the threat posed by nimble young firms getting technologies to market at unimaginable speeds," and "they're willing to pay extremely high premiums to protect their franchises", see Taptich Brian, 'Easy Way Out' (*The Economist*, 18 February 1999) <<https://www.economist.com/special-report/1999/02/18/easy-way-out>> accessed 27 December 2023.

²⁹⁰ Broughman and Fried, 55 with further remarks.

ing company for as much as \$1 billion, although its revenue only amounted to \$30 million at that time. Zuckerberg declined the offer even though the other two board members were against his decision.²⁹¹ Similar scenarios can be observed with other large companies.²⁹² In all these cases, despite the option of getting acquired may have been the safer and more lucrative option in the short run, the meanwhile large companies' decision paid off and enabled them to build an empire in the long run. In turn, this raises the question of why start-ups would nevertheless sell their business at an early stage.

One way to explain the prevailing trend of selling is that large technology companies have grown increasingly big and have been holding their strong market position for more than a decade now.²⁹³ Accordingly, knowing that they may not stand a chance to ever compete against the leading companies anyway, many start-ups prefer to opt for acquisitions. Indeed, a study conducted by Gao, Ritter and Zhu supports this observation by showing that, more so today than in the past, it is increasingly difficult for small companies without complementary scale and assets to become profitable and thus stay independent.²⁹⁴

The combination of these different factors may also clarify why IPOs are often not the preferred exit option nowadays and why the number of IPOs has decreased over the last decades. Israel provides an excellent example in this regard: out of approximately 138 transactions involving Israeli parties, only four IPOs were completed, whilst about 121 opted for M&A transactions in 2019.²⁹⁵ Similarly, whereas 36 companies undertook an IPO in Europe in 2020,²⁹⁶ 14,572

²⁹¹ Fass Allison, 'Peter Thiel Talks About the Day Mark Zuckerberg Turned Down Yahoo's \$1 Billion' (*Inc.*, 12 March 2013) <<https://www.inc.com/allison-fass/peter-thiel-mark-zuckerberg-luck-day-facebook-turned-down-billion-dollars.html>> accessed 27 December 2023.

²⁹² As mentioned earlier, Facebook attempted, for instance, to buy Snapchat in 2013.

²⁹³ Big technology companies like GAFAM have been holding their dominant position for much longer than their forerunners and thus have a significantly larger user and database than their former rivals ever had. This was also acknowledged by the European Commission in the *Google Search (Shopping)* case, where it underscored that unlike Google's predecessors AltaVista and Lycos, which were in a dominant position for two years and one year respectively, the search behemoth's persistent dominance across the EEA has been held for a much longer period. In fact, Google has not been genuinely challenged in search ever since the early 2000s, when it managed to distance itself from Yahoo and Microsoft.

²⁹⁴ Gao, Ritter and Zhu, 1671.

²⁹⁵ OECD (2020b), 3.

²⁹⁶ Atomico in Partnership with Slis and Orrick, 'The State of European Tech 2020' (*The State of European Tech*, 2020) <<https://2020.stateofeuropeantech.com/Chapter/value-creation/article/tech-ipos/#chart-713-3166>> accessed 27 December 2023.

companies opted for an acquisition in the same year.²⁹⁷ Although IPOs grew by 60% in 2021, reaching a volume of \$81.1 billion,²⁹⁸ with approximately 16,352 M&A deals closed—totally worth \$1.8 trillion²⁹⁹—the number and value of IPOs can still not compete with those delivered by M&A transactions.

B. Implications of the Main Findings

Overall, the previous analysis has shown that nascent companies and incumbents have a host of incentives to sell and buy their businesses, respectively. In fact, the prevailing dynamics in digital markets seem to incentivise start-ups to sell their companies instead of growing their businesses independently. Paradoxically, it is these incentives that, among other things, ‘feed’ the existing market structures and allow incumbents to marginalise almost any innovation by making sure that potential disrupters align with their value chain. This dynamic of motives to engage in M&A, therefore, creates a vicious cycle of incentives that strengthen existing market structures and enables established companies to continuously consolidate and expand their technological leadership³⁰⁰—a development that can adversely affect economic growth in the long term.³⁰¹

C. Interim Summary

This chapter aimed to demonstrate the various motives that can play a role when incumbents and start-ups decide to buy and sell a business, respectively. It showed how these motivations create a vicious cycle of incentives, which eventually benefits existing market structures and allows a few market players to own a large part of the industry and control a considerable part of the supply and demand of innovation. Although often creating a win-win situation for

²⁹⁷ Statistics of the number of mergers and acquisitions in Europe (IMMA Institute for Merger and Acquisitions and Alliances) <<https://imaa-institute.org/mergers-and-acquisitions-statistics/#Mergers-Acquisitions-Europe>> accessed 27 December 2023.

²⁹⁸ EY, ‘Strong third quarter for IPOs – especially in Europe’ (EY, 14 December 2021) <https://www.ey.com/en_ch/news/2021/12/2021-was-a-record-year-for-the-global-ipo-market-europe-with-strongest-growth> accessed 27 December 2023.

²⁹⁹ Pitch Report, ‘Global M&A Report 2021’ (PitchBook, 26 January 2022) <<https://pitch-book.com/news/reports/2021-annual-global-ma-report>> accessed 27 December 2023.

³⁰⁰ See also Lemley and McCreary, 63; Ezrachi and Stucke (2022), 135–138.

³⁰¹ See Lemley and McCreary; Kamepalli, Raghuram and Zingales.

the merging parties and their investors, the dynamics resulting from this vicious cycle may give rise to major innovation and competition concerns, as will be explained in more detail in the following chapter.

Chapter 2: Understanding Killer Acquisitions in Digital Markets

Having established the dynamics between incumbents and nascent firms, this chapter aims to focus on killer acquisitions more specifically. To fully grasp this phenomenon in digital markets, it is crucial first to understand the rationale behind traditional killer acquisitions and ascertain why, as commonly discussed in the literature, they are presumably less common in digital markets than in the pharmaceutical sector.³⁰² Hence, this chapter will embark on a full-fledged analysis of why exactly traditional killer acquisitions are less likely to occur in digital markets. To this end, it will look at the underlying rationale of killer acquisitions and assess the two principal characteristics of traditional killer acquisitions in light of digital markets. Thereafter, this chapter will conduct a literature review of the relationship between competition and innovation. This is followed by a discussion about whether large platforms substitute R&D by acquiring nascent companies and why it is so important to protect the independent R&D process of nascent companies. Moreover, the different effects killer acquisitions have on competition and innovation will be established, which is important to ascertain the competitive harm of this phenomenon in the first place. Overall, this chapter seeks to provide the reader with an in-depth understanding of killer acquisitions from an economic perspective.

A. Rationale Behind Traditional Killer Acquisitions

As stated earlier, traditional killer acquisitions refer to transactions where the acquiring incumbent purchases the target's innovation project in order to discontinue it thereafter.³⁰³ Although the rationale behind such traditional killer acquisitions may seem counterintuitive at first, Cunningham, Ederer and Ma established that traditional killer acquisitions represent a lucrative strategy for acquiring incumbents as, by terminating the target's promising innovation project, they can avoid potential competitors from drawing away demand, thereby preventing cannibalisation of existing sales revenue or vol-

³⁰² See, for instance, EC Report, 117–118; Holmström et al., 10–11.

³⁰³ [Part I: Chapter 1: A. 1.](#)

ume.³⁰⁴ These findings draw on what the economist Arrow has referred to as the ‘replacement effects’. Replacement effects describe the phenomenon in which monopolists generally exhibit less incentive to innovate, i.e., show weaker incentives to continue developing the target’s innovation activities if there is the slightest overlap. This holds especially true if the market in question is not very competitive. Consequently, in such situations, incumbents are generally enticed to acquire potential future rivals to pre-empt competition.³⁰⁵

In the context of the pharmaceutical industry, pursuing traditional killer acquisition strategies particularly makes sense, given that it allows companies to extend their patent monopoly artificially.³⁰⁶ More precisely, by discontinuing potential competitors, traditional killer acquisitions provide pharmaceutical firms with a powerful tool to prolong the benefits resulting from their timely limited patent monopoly,³⁰⁷ for which they must go through costly and lengthy clinical trials.³⁰⁸ Since digital markets function very differently from pharmaceutical markets,³⁰⁹ the question arises of whether traditional killer acquisitions are also commonly applied in digital markets.

B. Conditions of Traditional Killer Acquisitions in Light of Digital Markets

Following the definition of traditional killer acquisitions by Cunningham, Ederer and Ma, the key features of such transactions are that (i) they are horizontal in nature, i.e., operate in the same market, and (ii) the target’s innovation project is terminated post-transaction.³¹⁰ The subsequent analysis will there-

³⁰⁴ Cunningham, Ederer and Ma, 661.

³⁰⁵ Arrow, 619 et seq.

³⁰⁶ Alexiadis and Bobowiec, 69.

³⁰⁷ According to Art. 63 of the Convention on the Grant of European Patents, the maximum term of an EU patent amounts to 20 years from its filing date.

³⁰⁸ In the EU and US, it generally takes about ten to fifteen years on average for a drug to get clinical approval and thus be able to be marketed. For more information, see European Federation of Pharmaceutical Industries and Associations, ‘Clinical Trial’ <<https://www.efpia.eu/about-medicines/development-of-medicines/regulations-safety-supply/clinical-trials/>> accessed 27 December 2023; U.S. Food & Drug Administration, ‘The Drug Development Process’ <<https://www.fda.gov/patients/learn-about-drug-and-device-approvals/drug-development-process>> accessed 27 December 2023.

³⁰⁹ An overview of the main differences between pharmaceutical markets and digital markets is given by Holmström et al., 10–11.

³¹⁰ Cunningham, Ederer and Ma, 649; see also OECD (2020a), 9.

fore ascertain whether these conditions also apply to killer acquisitions in digital markets.

1. Do Merging Companies Commonly Operate in the Same Market?

As highlighted in Part I, new entrants often avoid entering digital markets where dominant companies are present.³¹¹ This is because (i) it may generally be hard to find funding in such markets in the first place,³¹² and (ii) start-ups may be more strongly exposed to ‘sell or be ruined’ threats, as well as copy strategies.³¹³ Hence, new entrants tend to penetrate fringe markets, where it is still uncertain in whose favour the market will tip, giving new entrants a genuine chance to compete for users.³¹⁴ The fact that innovation efforts of potential rivals are generally weaker in tipped markets may be further exacerbated by the presence of kill zones, referring to the reduced willingness of VCs to provide financial support for nascent firms that want to replicate the functionalities of dominant technology companies. Consequently, as already established in Part I, new entrants may often prefer to enter fringe markets instead of competing horizontally with dominant technology firms, where they may have difficulties finding sufficient financial support in the first place.³¹⁵

The fact that many start-ups enter new markets or markets other than where incumbents are already dominant has also been proven by the study conducted by Latham, Tecu and Bagaria. Their analysis aimed to scrutinise 409 acquisitions made by Amazon, Apple, Facebook and Google between 2009 and 2020. It revealed that out of the 409 acquisitions scrutinised, only 33 (13 Google, 8 Facebook and 12 Amazon) transactions met one of their pre-defined ‘filters’, that is, (i) showed a horizontal overlap with the buyer’s core business, or (ii) were vertically-related to that core business and likely to grow into a future competitive threat, for instance, by exhibiting a large user base. They found that a vast majority of the acquisitions analysed have been about acquiring new capabilities, enabling large technology firms to position themselves to enter new markets like AI, robotics, computer clouding, voice recognition, as well as music and video streaming.³¹⁶

³¹¹ [Part I: Chapter 2: A. 3.](#)

³¹² [See Part I: Chapter 2: B. 3.](#)

³¹³ [Part II: Chapter 1: A. 2.2.](#)

³¹⁴ For more information on tipping effects, see [Part I: Chapter 2: A. 2.](#)

³¹⁵ [Part I: Chapter 2: B. 3.](#)

³¹⁶ Latham, Tecu and Bagaria, 30 et seq.

More precisely, Latham, Tecu and Bagaria ascertained that the big technology companies analysed in their sample primarily acquired:³¹⁷

- i. Technological improvements that are incremental to their core business and where the nascent firm only offers a specific innovation which does not compete with it. Possible examples are provided by Apple's acquisitions of companies specialising in semiconductors, AR, and voice recognition, as well as Amazon's purchases of firms in distribution technology.
- ii. Complementary assets for products that are not related to their core business. This includes, for instance, Google's acquisition of assets related to its cloud computing business and Apple's purchase of different firms specialising in mapping.
- iii. Vertical products that improve their core ecosystem but do not constitute a dynamic competitive threat to the incumbent's core business. An interesting case in point offers Amazon's purchase of a few video streaming firms or Apple's acquisitions of music recognition technology.
- iv. Forays into new markets where the incumbent is not yet operating. For example, both technology behemoths Google and Amazon purchased various home automation and security companies. By contrast, Apple acquired a few firms in the health sector.
- v. Hot new innovations found, for instance, in the fields of AI, data analytics and voice recognition.
- vi. Idiosyncratic side bets or "moon shots" like Facebook's acquisitions in VR, Apple's purchase of firms specialising in self-driving cars or Google's entry into robotics.

Another similar study by Alcantara et al. confirms these observations, finding that big technology firms are indeed increasingly making acquisitions in new sectors to keep up with the fast pace of innovation and outflank competitors.³¹⁸ More precisely, in their analysis, which is based on publicly available company filings, they ascertained that Google, Facebook, Amazon and Apple undertook over 600 transactions throughout their life spans, 431 of which took place in industries outside their core business. More specifically, they discov-

³¹⁷ *ibid*, 35.

³¹⁸ Alcantara Chris, Schaul Kevin, De Vynck Gerrit and Albergetti Reed, 'How Big Tech got so big: Hundreds of acquisitions' (*The Washington Post*, 21 April 2021) <<https://www.washingtonpost.com/technology/interactive/2021/amazon-apple-facebook-google-acquisitions/>> accessed 27 December 2023.

ered that between 1988 and 2020, Apple made 27 acquisitions in their original business of software, hardware and apps, whilst it acquired 96 companies operating in new sectors. Likewise, within the same period, Amazon made only 40 acquisitions in its original business of books and e-bookings versus 71 in unrelated sectors, which helped it to successfully enter new markets. The acquisition strategies of Google and Facebook seem also to follow this pattern. Between 2001 and 2020, the search giant made 187 out of 268 transactions outside its core businesses, i.e., search, advertisement, mapping and mobile. Facebook—primarily known for advertising and messaging—undertook 77 acquisitions in new sectors versus 28 purchases in related markets between 2005 and 2020. The study also underscores that although these numbers include big and infamous deals like Google's acquisition of Motorola, the majority of transactions involved nascent firms.³¹⁹

These findings support the assumptions made in the previous section that although large incumbents are dominant in their original business, they still keep expanding their conglomerate concentration through acquisitions.³²⁰ They commonly use acquisitions of young and innovative firms as a means to penetrate new or related markets to speed up their entry or to improve their own innovation effort, respectively. Accordingly, it is reasonable to assume that there is a tendency in digital markets for incumbents to further entrench their market position by offensively entering new markets rather than merely defensively protecting it through traditional killer acquisitions. In the end, however, both strategies are means for incumbents to increase their bargaining power, reduce rivalry and raise barriers to entry.

2. Is the Target's Innovation Project Usually Terminated?

The fact that acquisitions in digital markets are commonly not horizontal also directly affects the termination requirement of traditional killer acquisitions, as it is often more lucrative for the purchaser to integrate the innovation project into an existing product or, more broadly, the ecosystem in question. In other words, provided that the acquirer does not already have a well-developed innovation of its own that it wishes to launch, as was, for instance, the

³¹⁹ *ibid.*

³²⁰ See [Part II: Chapter 1: A](#).

case in Softcard and Google Wallet,³²¹ there is usually no point in killing the target's innovation. After all, where no direct horizontal component is present at the time of the acquisition, the transaction enables the incumbent to acquire complementary sets of capabilities that may further contribute to developing its competitive advantage and allow it to expand its market power along the value chain. However, that is not to say that there are no killer acquisitions in the 'traditional' meaning in the digital economy, but rather to show that, unlike in the pharmaceutical sector, they may rather be the exception than the rule.

Another critical reason incumbents may not discontinue the acquired innovation, even where it may exhibit horizontal elements, is user loyalty. As discussed in more detail in Part I, due to network effects and the benefits they can bring, consumers may not always be willing to switch to a rival product or service, even if the quality of it is identical or even better.³²² Consequently, in such instances, the 'de-duplicating' costs are higher than the efficiency gains, making it uneconomic for the acquirer to terminate the target's innovation project.³²³ Facebook's acquisition of WhatsApp provides a helpful example: it is likely that although Facebook already had an instant messaging feature built into its platform through Messenger, it did not discontinue the target post-transaction because the messaging service already had a very loyal and large user base, making it unprofitable for the social media titan to terminate it.³²⁴ In such cases, it is reasonable to assume that, instead of killing the target company, it is more expedient for the acquirer to simply make a potential future competitive threat its own asset, thereby preventing it from evolving into a potentially independent rival that could endanger the incumbent's market position one day. After all, as highlighted by Zuckerberg himself, "[t]he businesses are nascent but the networks are established, the brands are already meaningful and if they grow to a large scale they could be very disruptive to us."³²⁵ Accordingly, by "expanding the pie"—as economists would put it—keeping the target's innovation alive can increase the incumbent's existing user base and amplify positive network effects. For instance, when Facebook bought Insta-

³²¹ Before Google launched Google Wallet, it bought Softcard—a future competitor—and discontinued it only three months after the deal. This case will also be discussed below in [Part II: Chapter 2: D. 3.2](#).

³²² See [Part I: Chapter 2: A. 1](#) and [Part I: Chapter 2: B. 2.1](#).

³²³ See also OECD (2020a), 31–32.

³²⁴ *ibid.*

³²⁵ *FTC v Facebook Inc.*, Case No.: 1:20-cv-03590-JEB (D.D.C. 2021), para. 90; More generally, see Mahari Lera and Pentland, 59, who found that companies tend to acquire start-ups which exhibit a high growth rate and a large user base.

gram, the latter was still very young, yet it had already been downloaded more than 45 times more than Facebook's own competing product Facebook Camera.³²⁶ Accordingly, it was probably more lucrative for Facebook to wait and see in which direction the market would tip, which ultimately led it to the decision to discontinue its own innovation as opposed to that of the target.³²⁷ In addition, this transaction bought Facebook time to first measure Instagram's impact on the social media giant's ecosystem and align the innovation with complementing its existing range of services rather than disrupt them.³²⁸

Another crucial aspect to keep in mind when discussing killer acquisitions in the context of digital markets is that, compared to other markets, keeping two (potential) competing products or services alive can make sense and be profitable for an incumbent where consumers can multi-home on its platforms. More precisely, as long as multi-homing occurs within its ecosystem, an incumbent may be less incentivised to kill the target, even if the innovation project is or may become a rival to its existing technology. By making the innovations interoperable, the acquirer may want to incentivise consumers to use both innovations in parallel rather than exploiting user behaviour to steer them away from alternative products or services. After all, by doing so, the incumbent in question can further consolidate its power by raising its rent extraction capacity. Therefore, unlike in pharmaceutical markets, the fact that multi-homing is possible in digital markets can, to some extent, reduce cannibalisation effects. A prominent example to underpin this observation is provided by Instagram and Facebook: the photo-sharing app includes an option which allows its users to share their stories directly on Facebook too. Thus, incumbents can exploit multi-homing to their advantage by creating features that will enable consumers to use competing services owned by the same entity simultaneously. Hence, Facebook did not have to discontinue one or the other application but could keep both to its advantage. This also applies to the merger between Facebook and WhatsApp: it enabled Facebook to expand its range of messaging apps and, at the same time, gain additional users. Likewise, the fact that Amazon did not terminate the online shoe and clothing retailer platform Zappos post-transaction—despite being a rival company—shows that incumbents are frequently not driven by cannibalisation effects such as witnessed in the pharmaceutical industry.

³²⁶ OFT, Case ME/5525/12 – *Facebook/Instagram*, para. 17.

³²⁷ Tam Donna, 'Facebook kills Snapchat clone Poke and Facebook Camera' (CNET, 9 Mai 2014) <<https://www.cnet.com/tech/mobile/facebook-kills-snapchat-clone-poke-and-facebook-camera/>> accessed 27 December 2023.

³²⁸ *FTC v Facebook Inc.*, Case No.: 1:20-cv-03590-JEB (D.D.C. 2021), para. 103.

Besides multi-homing, the fact that cannibalisation effects, as found in the pharmaceutical markets, may be less pronounced in digital markets can be attributed to technology companies' ability to attract various customer groups with technologies that have very similar functions. Social media's different demographics offer an illustrative example in this regard. For instance, compared to Instagram, Facebook has more male users and generally attracts people with a higher average age.³²⁹ Thus, despite Facebook's similar functionalities and rivalrous character to Instagram, there is an incentive for the incumbent to keep both innovations alive. This observation does not apply to pharmaceutical markets since a specific drug typically cures a specific disease and, consequently, targets a specific customer group. In this sector, there is usually no added value in keeping two competing drugs, which in turn explains the more common use of traditional killer acquisitions.

C. Rationale Behind Reverse Killer Acquisitions

Having established that unlike in the pharmaceutical sector, traditional killer acquisitions are the exception in digital markets rather than the rule, the question arises as to what the rationale is behind reverse killer acquisitions.

In the previous sections, it has been ascertained that large platforms are often not incentivised to terminate the acquired innovation but rather engage in reverse killer acquisitions. This does not, however, exclude the possibility that incumbents use such transactions to kill competition that may have arisen in the absence of the transaction. In fact, the opportunity to acquire nascent firms can often disincentive large companies to engage in organic growth as it allows them to save time and resources, thus speeding up their entry into the target market whilst making sure to face as little potential future competition as possible. The rationale behind such acquisitions is, therefore, two-folded: on the one hand, they prevent future potential competition from growing independently, thereby allowing purchasers to control the development of the innovation activities of nascent companies at an early stage. Accordingly, they lead to the elimination of valuable streams of uncertainty that could have arisen in the absence of the transaction. On the other hand, such transactions

³²⁹ For more information on the demographics of social media platforms, see, for instance, Newberry Christina, '109 Social Media Demographics Marketers Need to Know in 2024' (Hootsuite, 28 August 2023) <https://blog.hootsuite.com/social-media-demographics/#Facebook_demographics>; Barnhart Brent, 'Social media demographics to inform your brand's strategy in 2023' (Sproutsocial, 28 April 2023) <<https://sproutsocial.com/insights/new-social-media-demographics/>> both accessed 27 December 2023.

allow incumbents to exacerbate the expansion of the existing efficiencies of scope,³³⁰ eventually enabling them to further strengthen their market position. In a nutshell, reverse killer acquisitions are useful instruments to pre-empt potential threats at an early stage whilst allowing incumbents to save time and resources, which they would otherwise have had to invest in R&D.

D. Understanding the Economic Impact of Killer Acquisitions

Based on the aforementioned findings, this subchapter aims to assess the economic impact of killer acquisitions. Given that innovation constitutes a core parameter in the assessment of killer acquisitions and, consequently, plays a crucial role in the merger control analysis, the following subsection will first review the existing literature on the highly complex relationship between competition and innovation before looking more specifically at the interplay between competition and innovation in digital markets.

1. Relationship between Competition and Innovation

In markets characterised by dynamic competition, such as those in the digital economy, competition usually takes place on the basis of innovation rather than price and output. Accordingly, in digital markets, innovation constitutes a core parameter for the assessment of competition and, consequently, plays a crucial role in merger control. Given the highly complex relationship between competition and innovation, the following subsection will review existing literature on this topic before looking more specifically at the relationship between competition and innovation in digital markets.

1.1. Review of the Economic Literature

It is well known that innovation is indispensable for economic growth³³¹ and generally benefits society by lowering costs and providing new and better products or services. Economic literature offers a long list of various studies on the impact of market structure on innovation.

³³⁰ Alexiadis and Bobowiec, 70.

³³¹ See, for instance, Aghion and Howitt, 323–335; Hasan and Tucci, 1264–1276; Freeman and Soete.

When it comes to the relationship between competition and innovation, probably the most influential economist thinkers of the 20th century are Schumpeter and Arrow. Schumpeter established that the prospect of market power increases innovation incentives. More precisely, he found that rewarding successful innovation with temporary market power leads to decreased competition ex-post whilst spurring innovation ex-ante.³³² He posited that monopoly positions commonly just last for a short term. This is because, according to him, capitalism is an evolutionary process that “can never be stationary”.³³³ In fact, the capitalist economy constantly moves, thereby continuously revolutionising “the economic structure within, incessantly destroying the old one, incessantly creating a new one.”³³⁴ He further specified that “[t]he fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers’ goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates.”³³⁵ This is what he famously called the ‘process of creative destruction’.³³⁶

The Schumpeterian thesis is commonly contrasted with Arrow’s theory. Unlike Schumpeter, Arrow ascertained that the presence of competitive pressure in markets provides a more fertile setting for innovation. In other words, he argued that competitive market structures lead to innovation growth as they incentivise companies to constantly improve, creating better products or services to attract consumers and, consequently, gaining market shares from rival companies.³³⁷ These findings also led him to the conclusion that monopolists generally want to protect their status quo and, for that reason, are disincentivised to initiate an innovation that may cannibalise existing sales.³³⁸

In their study, Aghion et al. have tried to find a middle ground between Schumpeter and Arrow. To this end, they have developed a model on the relationship between product market competition and innovation, resulting in an “inverted-U pattern”. More precisely, their model distinguishes between technology leaders and laggards: whereas existing companies continuously innovate to reduce production costs, a laggard company must always first catch up with the leader before becoming a leader itself. They conclude that if com-

³³² Schumpeter (1950), 87–88.

³³³ *ibid*, 82.

³³⁴ *ibid*, 83.

³³⁵ *ibid*.

³³⁶ Schumpeter (1950), 83.

³³⁷ Arrow, 620.

³³⁸ See Shapiro, 401.

petition in a market is very low at the beginning, increasing product market competition can induce faster growth of the market; thus, higher levels of innovation as companies will innovate to escape competition. In turn, if competition is initially high, an increase in product market competition slows down the innovation rate since high initial levels of innovation are likely to reduce post-innovation profits of laggard companies.³³⁹

Another influential author regarding the relationship between innovation and competition is Shapiro. He draws his theory on Arrow's assumption that innovation flourishes where markets are contestable and that firms are only incentivised to innovate when operating in such a market. The contestability of a market depends on several factors, including low switching costs, low sunk costs, low brand loyalty, the absence of supernormal profits and access to technology for new entrants.³⁴⁰ Accordingly, where a market does not meet these factors and exhibits a low degree of contestability, incentives to innovate are generally low. At the same time, Shapiro highlights that Schumpeter's position on innovation, i.e., that "market power and large-scale spurs innovation",³⁴¹ does not contradict Arrow's view but reinforces each other. Shapiro posits that Schumpeter saw not only the prospect of monopoly profits as an incentive for companies to innovate but also that monopoly power already held can spur technological progress.³⁴²

Hemphill shares Shapiro's view, further elaborating upon the findings by distinguishing between two phases: pre-innovation and ex-post-innovation.³⁴³ In the first phase, he identifies that, similar to Shapiro's observations, Schumpeter viewed the prospect of monopoly profits as an incentive to innovate.³⁴⁴ In this respect, Schumpeter's thesis does not contradict Arrow's theory.³⁴⁵ With regard to ex-post innovation, Hemphill sides with Schumpeter, finding that some incumbents' incentives to innovate indeed remain post-transaction. More precisely, staying innovative is required even after achieving a strong market position as it is indispensable to secure incumbents' market position in the long term.³⁴⁶ The incentive to innovate may thereby extend to both (i) size, as the incumbent has a larger base to which an improvement can be applied

³³⁹ Aghion et al., 710–720.

³⁴⁰ Kokkoris and Valletti, 224.

³⁴¹ Shapiro, 363; see also Scherer, 1418.

³⁴² *ibid.*, 363.

³⁴³ Hemphill, 1989.

³⁴⁴ *ibid.*

³⁴⁵ *ibid.*, 1990–1991; see also Shapiro, 363.

³⁴⁶ For more information on incumbents' incentive to innovate, see also Baker (2007), 578.

and (ii) market power, meaning the increased appropriability of the returns which may be reached from further improvements.³⁴⁷ Although acknowledging that this argumentation contradicts Arrow's theory, Hemphill underlines that Schumpeter and Arrow's theories on ex-post effects coincide where it affects a market other than the incumbents' core business. Put differently, according to Hemphill, Arrow's cannibalisation concerns do not occur in markets other than the incumbent's home market. Based on these findings, Hemphill ascertains that pursuing innovation outside the incumbent's home market leads to many different Schumpeterian advantages and avoids the rise of cannibalisation concerns, such as those formulated by Arrow's replacement effects. This leads him to the conclusion that this reconciliation between the two perspectives is often overlooked, not least in the debate revolving around digital platforms and their active acquisition strategies outside their home markets.³⁴⁸

1.2. Application of the Literature Review on Digital Markets

Whilst the debate around competition and innovation shows how highly complex their relationship is, it should be stressed that in the context of digital markets, layers of complexity are added, which may make certain observations of the 20th century not applicable anymore.

In fact, Schumpeter's very presumption that more productive companies, i.e., firms that provide better products, services or business models, grow faster than less productive incumbents, which enables the more productive firms to leapfrog existing leaders, may not necessarily apply to digital markets. Evidence shows that after 2000 and with the rise of the digital economy, companies with a certain level of productivity only grew half as fast as firms with the same level of productivity in the 1980s and 1990s.³⁴⁹ This may partially be traced back to the shift from standardised products and services to tailored ones. More precisely, before the digital era, productivity could be increased by standardisation. Nowadays, the strong presence of software allows companies

³⁴⁷ Appropriability refers to the ability of a company to retain the added financial value created by the exploitation of its own innovation and the ability to benefit from competitive advantages coming along with it. Institutional frameworks to secure appropriability are, for instance, intellectual property rights, the probable degree of knowledge spill-overs where knowledge is concentrated in merging parties, as well as the intensity of product competition. For more information on this topic, see Kay, 181–191.

³⁴⁸ Hemphill, 1991.

³⁴⁹ Bessen James, 'How big technology systems are slowing innovation' (MIT Technology Review, 17 February 2022) <<https://www.technologyreview.com/2022/02/17/1044711/technology-slowing-innovation-disruption/>> accessed 27 December 2023.

to offer tailored products and services with a greater variety or more product features. Therefore, to thrive in the digital economy, firms need to be able to tailor their products or services to match consumer needs.³⁵⁰ Consequently, whereas productivity seems to play less of a role in the economic growth of firms than a few decades ago—at least for companies operating in the digital economy³⁵¹—data and network effects have become the ‘new’ productivity standard indispensable for companies to succeed. In the context of the digital economy, this shift has allowed established companies which dispose of a vast amount of data, to cement their market position over the years whilst slowing start-ups’ growth and making it increasingly more difficult for innovative new entrants to displace them. These observations can be supported by the fact that ever since 2000—when leading companies increasingly started investing more and more in proprietary systems—the number of disruptive technologies has drastically declined. Indeed, evidence indicates that the chance of a top-ranked firm’s sales dropping out of one of the top four spots within four years has been reduced from over 20% to around 10%.³⁵² The fact that very large technology companies have been holding a leading position for almost two decades further strengthens this argument.

The combination of start-ups’ slowdown in growth and the ever-increasing power of existing leading companies is also likely to affect new entrants’ incentives to become incumbents themselves. In other words, as already described above, instead of dreaming big, many innovative companies nowadays have set their primary goal to getting acquired.³⁵³ Where such goals lead to the termination or circumvention of innovation—be it the project of the acquirer or the target—the incentive of nascent firms to be bought out rather than stay independent can be fatal for a flourishing dynamic economy. In fact, by actively disrupting Schumpeterian competition and stimulating cannibalisation effects, strategic killer acquisitions stop the emergence of new waves of creative destruction. Put in Katz’s words, the “acquisition of a nascent competitor can be an especially effective way to avoid Schumpeterian competition”,³⁵⁴ thus a means to artificially prevent start-ups from unleashing the ‘gale of creative destruction’ as such transactions interrupt the natural process of incum-

³⁵⁰ See also [Part I: Chapter 2: A. 5.](#)

³⁵¹ For companies operating in more traditional markets, productivity still constitutes a decisive factor for growth.

³⁵² Bessen James, ‘How big technology systems are slowing innovation’ (MIT Technology Review, 17 February 2022) <<https://www.technologyreview.com/2022/02/17/1044711/technology-slowing-innovation-diöruption/>> accessed 27 December 2023.

³⁵³ [Part II: Chapter 1: A. 2.](#)

³⁵⁴ Katz, 2.

bents being potentially replaced by a new player.³⁵⁵ Conversely, this strategy contributes to rendering digital markets increasingly incontestable, making it harder for competitors to draw market share away from incumbents.³⁵⁶

Hemphill's point that incumbents' innovation incentives remain where innovation takes place outside their home market may also only be valid to a certain extent because they often do so by acquiring nascent firms at an early stage, not leaving them the time to grow independently grow into a disrupter.³⁵⁷ This is because, as already described in Part I, disrupters generally focus more on developing the business model first rather than merely looking at the product or service.³⁵⁸ To this end, they typically redefine the buying criteria, test their technology and then start gaining scale. Over time, they move from the fringe market, i.e., the low end of the market or a new market, to the mainstream, typically first eroding the incumbents' market share and, subsequently, their profitability.³⁵⁹ That said, coming back to Hemphill's argument on competition taking place outside the market, it may indeed be true that incumbents in digital markets are incentivised to constantly innovate; however, given that a common way to do so is to acquire innovative nascent companies operating in fringe markets,³⁶⁰ large firms also often take control of the development of innovation at an early stage, not giving emerging firms the time to potentially move from the fringe market to the market where the acquirer is already active itself. Figuratively speaking, by doing so, they smother the fire before it can cause any damage to their market position.³⁶¹ Interestingly, this is also reflected in Hemphill's example of Alphabet's subsidiary Waymo: he finds that the self-driving car company is the result of the incumbent's research lab and argues that this example shows that companies are incentivised to innovate

³⁵⁵ Note that the problem is similar to that of blocking patents. For more information on this topic, see Heinemann (2019a), 149–168; Murer.

³⁵⁶ See Kokkoris and Valletti, 224.

³⁵⁷ In this regard, see especially [Part II: Chapter 1: A. 2.3.](#)

³⁵⁸ See [Part I: Chapter 1: D. 3.](#)

³⁵⁹ Christensen Clayton M., Raynor Michael E., and McDonald Rory, 'What is Disruptive Innovation?' (*Harvard Business Review*, December 2015) <<https://hbr.org/2015/12/what-is-disruptive-innovation>> accessed 27 December 2023; Ezrachi and Stucke (2022), 28; see also more generally, Kim and Mauborgne.

³⁶⁰ As highlighted above, start-up acquisitions are often non-horizontal, see [Part II: Chapter 2: B.1.](#)

³⁶¹ It should be added that commercial activities in fringe markets can also have a restraining impact on incumbents before entry actually occurs. For more information, see, for instance, Goolsbee and Syverson, 1611–1633, who conducted a study on the airline market, finding that the entry of cheap airlines on adjacent routes caused legacy carriers to diminish their fares, even where no actual competition on the affected routes was present.

outside their core business.³⁶² Even though this argument is surely correct to some extent, it also neglects the fact that Waymo is the product of various acquisitions. In fact, its initial team was created through the acquihiring of the whole VueTool team, which, at that time, was independently working on a digital mapping technology project for the Stanford Artificial Intelligence Laboratory (SAIL).³⁶³ Accordingly, Hemphill's argument does not necessarily hold true in the context of killer acquisitions. Instead, it seems that Arrow's replacement effects, although in a flipped version, extend to markets outside the acquirer's home market. Large companies often use killer acquisitions to forego their own innovation efforts whilst minimising the risk of the rise of potential disrupters that may have arisen otherwise. By doing so, incumbents hamper the full potential of what Schumpeter called the 'process of creative destruction' and, at the same time, escape high product market competition which, following Aghion et al.'s theory, is more intense in markets where competition is low at the beginning,³⁶⁴ i.e., in fringe markets where start-ups often try to succeed first. Accordingly, killer acquisitions in these markets seem to aim to precisely prevent this kind of competition. In turn, this observation raises the question of whether acquisitions of promising start-ups should therefore be viewed as a means for large incumbents to substitute R&D.

2. Acquisition v R&D

In the previous subsections, it was found that killer acquisitions are a useful tool for incumbents to both avoid the 'process of creative destruction' and escape high product market competition. With regard to R&D efforts, this begs the question of whether such transactions are used to substitute innovation efforts or whether they just complement such.

2.1. Acquisition–Substitution or Complement of R&D?

It is empirically proven that while incumbents are better at quickly scaling a technology due to the immense resources at their disposal, nascent companies are generally better at spawning more significant and distinctive innovations since they are more agile and do not have to go through lengthy approval

³⁶² Hemphill, 1991.

³⁶³ For more information, see Nicas Jack and Higgins Tim, 'Google vs. Uber: How One Engineer Sparked a War' (*The Wall Street Journal*, 23 May 2017) <<https://www.wsj.com/articles/how-a-star-engineer-sparked-a-war-between-google-and-uber-1495556308>> accessed 27 December 2023.

³⁶⁴ Aghion et al., 701–728.

processes.³⁶⁵ In other words, incumbents exploit innovation, whereas start-ups explore it.³⁶⁶ Among other things, this is also precisely why large platforms constantly monitor emerging innovations to identify the best ideas, products, services or business models to be implemented in their ecosystems.

Although this does not mean that they do not innovate themselves, which also reflects in the fact that nine out of the top twenty most innovative companies in the world are companies operating in technology markets³⁶⁷ and that, according to Statista, Amazon, Meta, Alphabet and Apple are all listed in the top five companies for global spending on research in 2022,³⁶⁸ it is highly likely that when they can acquire an innovative nascent company, they will often focus their R&D strategies more on the development than on the research part. Viewed like that, choosing an inorganic growth can harm innovation as research is an essential component to lead in new waves of disruptive technologies. Moreover, once an incumbent has acquired a new or better product or service, it may have incentives to cut back on R&D efforts or, at least, channel them in another direction, thereby reducing or eliminating potential head-to-head R&D competition that could have occurred in the absence of the acquisition.³⁶⁹ A case in point is provided by the *Google/Fitbit* merger:³⁷⁰ why would Google, for instance, still want to invest time and resources in the development of alternative wearable devices if it now owns a well-established brand which has built a community of more than 29 million active users over the last decade?³⁷¹ Accordingly, in such cases, companies have significantly fewer incentives to start or pursue their own development efforts since they can successfully acquire an existing innovation project instead.

³⁶⁵ Usually, in large companies, innovation projects must be reviewed by several decision-making levels before being introduced. Hence, it is usually very time-intensive for large corporations to launch a new innovation project.

³⁶⁶ For more information on this topic, see Cooper, 75–83; Akcigit and Kerr, 1374–1443.

³⁶⁷ BusinessTech, 'Tech companies dominate as the most innovative in the world', (*BusinessTech*, 28 October 2017) <<https://businesstech.co.za/news/business/207819/tech-companies-dominate-as-the-most-innovative-in-the-world/>> accessed 27 December 2023.

³⁶⁸ Statista Research Department, 'Ranking of the companies with the highest spending on research and development worldwide in 2022' (*Statista*, 22 November 2023) <<https://www.statista.com/statistics/265645/ranking-of-the-20-companies-with-the-highest-spending-on-research-and-development/>> accessed 27 December 2023.

³⁶⁹ See Federico, Langus and Valletti, 136 et seq.

³⁷⁰ Case COMP/M.9660 – *Google/Fitbit*.

³⁷¹ Osterloh Rick, 'Google completes Fitbit acquisition' (*Blog Google*, 14 January 2021) <<https://blog.google/products/devices-services/fitbit-acquisition/>> accessed 27 December 2023.

This is different where incumbents have no opportunity to buy a nascent company because, for example, the start-up turned down the offer. In such cases, particularly where the IP rights are imperfect, large technology companies may increase their bargaining power by threatening the start-up with imitation attacks. In these instances, the incentive to innovate is, however, purely strategic.³⁷² This raises the question of how, in a hypothetical scenario, large incumbents would engage in R&D where digital markets would be more competitive, i.e., the threat of competition would be more imminent, and acquisitions would not be an option.

To get to the bottom of this question, it may be worth looking at Cohen's extensive empirical study across multiple industries, where he ascertained that although R&D expenditure generally increases proportionally with firm size, the number of innovations increases less than proportionally. In fact, evidence shows that the larger the firm's size, the more R&D efforts are skewed towards process and sustaining innovations.³⁷³ Instead of attributing this to the inefficiency of large companies, Cohen finds that their ability to spread R&D costs over larger sales volumes gives them a pecuniary incentive to focus more on marginal innovation.³⁷⁴ In a similar vein, Christensen's analysis of the disk drive industry shows that in all the cases studied, it was the industry's leading companies that led in sustaining technologies, but it was new players that toppled their position with disruption.³⁷⁵ These findings also underpin Deller et al.'s study, where they analysed the R&D intensity of the leading 100 digital companies and compared patterns in key markets for the big technology firms GAFAM relative to direct rivals, which belong among the top digital firms according to Forbes. Their study demonstrates that although these companies dominate in terms of R&D expenditure, they do not do so when it comes to R&D intensity.³⁷⁶ Put differently, even though large companies have high R&D expenditures and often invest in sustaining projects, they tend to invest less in R&D intensity—the very hallmark of disruption.³⁷⁷ Even where they invest in disruption, which occurs in particular in the context of so-called 'moonshots',

³⁷² See also Gans and Stern (2004), 488, who look at the R&D incentives of incumbents in light of licensing.

³⁷³ Cohen, 137. This observation also underpins Arrow's theory, see [Part II: Chapter 2: D.11](#).

³⁷⁴ *ibid*, 138; see also Fishman, Hadas and Schreiber, 811–822.

³⁷⁵ Christensen, 10–18; see also Thiel and Masters, 10, who also highlight that it is generally start-ups that come up with new technology.

³⁷⁶ Deller et al., 16–17.

³⁷⁷ See also Christensen, 43. He finds that incumbents often invest in sustaining innovation, thereby addressing the needs of the companies' most powerful consumers instead of smaller markets that have poorly defined customer needs.

referring to exploratory and ground-breaking projects, they typically only do so far outside their core businesses so that innovation cannot undermine their existing value chains.³⁷⁸ These facts, therefore, largely confirm the observations made in the preceding section that digital markets are predominantly characterised by Arrow's replacement effects.

In turn, this begs the question of whether large incumbents substitute R&D intensity with acquisitions of nascent companies. In this regard, Deller et al. found, for instance, that although in absolute terms, Google and Microsoft have spent more money on acquisitions of innovative firms, evidence shows that in relative terms, they do not spend a higher proportion of their revenue on M&A than other companies.³⁷⁹ Accordingly, if one were to compare their revenues relative to the amount of money spent on M&A, these companies would, on average, not spend more money on transactions than other firms. With an annual turnover amounting to hundreds of billions of USD,³⁸⁰ it is, however, questionable how far the relative terms can and should be considered.

Instead a more conclusive parameter in digital markets may be, for instance, to compare the purely home-grown innovations with the number of acquisitions and compare this ratio with other large companies operating across different sectors. However, such a comparison may also not necessarily lead to a conclusive result given that, due to the enormous financial power that incumbents possess in combination with their large-scale information systems, incumbents can virtually out-invest any start-up by reverse-engineering their innovation. An illustrative example is provided by Nuance—a company specialising in speech recognition. It began in 1994 as a spinoff from SRI—a Stanford laboratory. In the early years of Nuance, speech recognition was generally constrained by computer processing power, thus, limited to vocabulary. However, with computers growing increasingly more powerful in the 2000s, it developed an app called Dragon Dictation, which could recognise large vocabulary and transcribe it in real time. This drew Apple's attention which eventually featured Nuance's technology in its iPhone 3GS. Consequently, other phone manufacturers, such as Google, also wanted to benefit from it, leading to the rapid

³⁷⁸ Ezrachi and Stucke (2020), 30. Incidentally, this also reflects in Hemphill's example of Alphabet's subsidiary Waymo, which was mentioned in the preceding section.

³⁷⁹ Deller et al., 18.

³⁸⁰ For instance, in 2021, GAFAM's net profit amounted to \$320.47 billion, which equals South Africa's GDP, see Ecofin Agency, 'The 2021 net profit posted by GAFAM reached S. Africa's estimated GDP' (Ecofin Agency, 8 February 2022) <<https://www.ecofinagency.com/>> accessed 27 December 2023.

growth of Nuance's technology. With Apple's introduction of Siri, based on Nuance speech recognition, the company's revenues reached a peak of \$1.7 billion. However, Nuance's success story was short-lived. Acknowledging the importance of speech recognition, large technology companies themselves started actively investing in this technology, including Amazon. In fact, the e-commerce giant developed Alexa, whose team now consists of over 10,000 engineers—a number that Nuance could not compete with, especially not in combination with the large user base and the resulting vast amount of data Amazon possessed. Consequently, Nuance was overtaken by the innovation of other big technology companies, which led it to shift its focus on market niches like health care.³⁸¹

This example teaches three lessons: first, it confirms that nascent firms have a great potential to introduce disruptive technologies, which shows how important they are for progress. Second, disruptive technologies may often need time to develop. After all, it took Nuance approximately six years to create the revolutionary voice recognition it did. This observation is closely related to the third lesson: incumbents are very good at reverse engineering and, once successfully executed, are better at scaling their technology than smaller companies. Accordingly, provided that it has been recognised early enough, once a disruptive innovation has reached the market, incumbents are generally likely to out-invest the innovative firm, even in the absence of an acquisition. In the long term, this may even lead to the innovative firm being pushed out of the market, leaving the incumbents again dominating the market, as was the case with Nuance.

In turn, this observation raises the question of why competition authorities should care about start-up acquisitions in the first place if large companies can out-invest them anyway with their own R&D investments. The answer to this lies in the importance of the 'neutral' development of innovation in digital markets. The following analogy should help clarify the point: in the 1920s, Robert Moses—probably the most prominent 20th-century urban planner of New York—decided to deliberately design bridges so low that buses could not pass through. This way of building bridges aimed to achieve a specific social effect: to disincentivise people who could not travel by car to the parkways on Long Island, New York. Accordingly, it mainly targeted lower-income families and people of colour and contributed to the segregation of usually white rich

³⁸¹ Bessen James, 'How big technology systems are slowing innovation' (MIT Technology Review, 17 February 2022) <<https://www.technologyreview.com/2022/02/17/1044711/technology-slowing-innovation-disruption/>> accessed 27 December 2023.

people.³⁸² In the context of digital markets, this example is interesting in that it shows how important the architecture of markets can be. Applied to large platforms, Moses' way of building bridges could be used as an analogy of how large technology firms—the very architects of the digital world—can influence and shape new markets to achieve a specific outcome that favours them, i.e., allows them to cement and extend their market position, thereby generating abnormal profits. Moreover, this control over start-ups' innovation path enables incumbents to appropriate high levels of knowledge that not even governments have. In fact, it helps them gradually build knowledge monopolies that threaten both competition and innovation and enables them to scale away from contestability.³⁸³

These observations imply that by allowing incumbents to acquire start-ups unhindered, i.e., without having to undergo any legal scrutiny, large technology firms are, to some extent, given the opportunity to influence how emerging markets are shaped and how they should be further developed.³⁸⁴ Put differently, the unfettered purchase of small companies gives them the power to foster the nature of innovation in such a way that is not necessarily best for consumers but is designed to extract maximum value in favour of the large technology firms themselves. Accordingly, to come back to the question above, even if incumbents can out-invest virtually any start-up, by keeping nascent firms independent, large platforms can take less influence on the way they develop new technologies and how emerging markets evolve. Ensuring an independent R&D process that is detached from large technology companies and their intention is thus crucial to guarantee genuine progress of technology and the digital sovereignty of the EU. The independence of nascent firms eventually also increases the diversity of portfolio research projects, which in turn enhances the knowledge within the industry that could unlock greater inventions³⁸⁵—an important aspect to keep in mind for the policy debate in Part 4.³⁸⁶

³⁸² For more information on Robert Moses, see Caro, 318–319.

³⁸³ See also Ezrachi and Stucke (2022), 98.

³⁸⁴ Note that the idea of making the analogy between Moses and technology firms has been inspired by Winner, 123–124.

³⁸⁵ Cohen and Klepper, 7–9, finding that the higher the number of small firms, the greater is the technological diversity.

³⁸⁶ See in particular [Part IV: Chapter 1: C. 2.2.a](#).

2.2. Application to Killer Acquisitions

The previous analysis has shown that whilst incumbents spend billions of dollars on R&D in digital markets, they tend to spend more time and resources on developing and reverse-engineering than on researching from scratch themselves. In other words, to some extent, they substitute the first stages of research, thereby reducing their investment R&D intensity through acquisitions. This strategy commonly allows them to enter markets more efficiently and, by the same token, forego potential competition by taking control over disruption that may have become potentially detrimental for them. Such a strategy is particularly concerning with respect to the fact that it is start-ups that usually bring about disruption. Unfiltered approval of start-up acquisitions by large companies makes the innovation landscape more centralised and less diversified, giving a few large firms the ability to exert great influence over the development of new products and services whilst nudging consumers to innovation that sustains their ecosystems. Viewed like that, acquisitions of nascent companies allow incumbents, to some extent, to colonise knowledge—a highly powerful tool to continuously feed incumbents' ecosystems and hinder disruption from gaining overhand.

By letting incumbents buy start-ups at an early stage, nascent firms are also not given a chance to grow independently and potentially develop a breakthrough innovation that, as shown in the previous sections, generally needs time.³⁸⁷ According to the Lear Report, particular attention in this regard must be given to acquisitions by Facebook and Google, which both tend to acquire start-ups already after 2.5 years and four years, respectively.³⁸⁸ In a similar vein, Gautier and Lamasch revealed that these two technology firms tend to buy start-ups at a substantially younger age than, for instance, Apple, Amazon and Microsoft, typically waiting 6.5 to 8 years before purchasing a firm.³⁸⁹ The fact that large companies generally buy companies at an early stage is additionally supported by the recently published market study on GAFAM led by the Federal Trade Commission, finding that in at least 39.3% of the 616 transactions in which the target company's age was available, the start-ups were less than five years old at the time of the transaction.³⁹⁰ Although age can un-

³⁸⁷ For instance, according to Christensen, it took twenty years for hydraulic excavators to disrupt the market. Had potential disrupters constantly been acquired by leading companies, it may have taken even longer. For more information, see Christensen, 61.

³⁸⁸ Lear Report, 19.

³⁸⁹ Gautier and Lamasch, 15.

³⁹⁰ FTC Study, 24–26.

doubtedly be an indicator of the presence of a potential killer acquisition, it should also be highlighted that it is rather the target's innovation potential that provides information as to the transaction's harmfulness. Hence, it is highly important that in its merger control analysis, the European Commission pays close attention to the start-up's business model—a point that will be taken up again later in Part IV.³⁹¹

3. Effects of Killer Acquisitions on Competition and Innovation

Having established the damages that killer acquisitions can cause on an industry level, it is also important to analyse the effects they can have on a more micro-level—an exercise which is crucial considering that, due to its strong reliance on the neo-classical economic theory, the current merger control assessment generally puts great emphasis on the effects a transaction can have on the relevant market.³⁹²

3.1. Positive Effects

In principle, there seems to exist a wide consensus that acquisitions of start-ups are likely to have pro-competitive or neutral effects on the market, not least because they usually exhibit low or non-existing market shares and do not often lead to a (substantial) increase of market concentration.³⁹³ Moreover, acquisitions of nascent companies, where the product is integrated into an existing platform or the ecosystem dominated by the acquirer, can create valuable synergies between the acquirer's innovation capabilities and the target's innovation capabilities, such as skills, assets and so forth. This may lead to significant efficiencies, which usually also allow products or services to be marketed more efficiently, thus reaching the market faster.³⁹⁴ Additionally, due to incumbents' immense resources, experience and technical capabilities, acquisitions of nascent firms may commonly lead to more or better outputs, thus notably improving the innovation's performance and/or quality.³⁹⁵ In short, incumbents are often simply better placed to push fledgling companies to grow to their full potential. After all, there is generally a huge difference be-

³⁹¹ See [Part IV: Chapter 1: C. 4.2.a\)bb\)](#).

³⁹² The relevant market will be explained in more detail below, see [Part III: Chapter 1: C. 1.](#)

³⁹³ This will be further elaborated on in [Part III: Chapter 1: C. 5.1.a\)](#).

³⁹⁴ See Mandel and Carew, 7.

³⁹⁵ Marty and Warin, 2.

tween having an innovative idea and eventually scaling it and turning it into a profitable business.³⁹⁶ Accordingly, start-ups often benefit from incumbents' economies of scope and scale, network effects, financial strength and marketing resources.³⁹⁷ Of course, this presupposes that the target's innovation is not killed post-transaction, i.e., that it is not a case of a traditional killer acquisition.

In general, integration—which is relevant where the target's innovation is not discontinued—can also minimise transaction costs, such as costs of production and distribution. In this context, it is worth mentioning that, due to incumbents' huge user bases, they can generally deliver the technology acquired to a larger pool of users,³⁹⁸ thus making a technology known more quickly than smaller firms. It stands to reason that integrating an innovation project can also contribute to the innovation performance of the acquirer³⁹⁹ and enhance its value proposition.⁴⁰⁰ Google Maps offers an interesting case study in this regard. Over the years, Google has bought various nascent companies with complementary services, such as Where2, Keyhole Inc, Endoxon, ImageAmerica, Quiksee, Zagat and so forth, in order to enhance its own technology and capabilities,⁴⁰¹ thus constantly improving its innovation. In this respect, by 'bolting on' the acquired technologies and capabilities, these acquisitions seem to have led Google to create substantial synergies and efficiencies. In fact, by combining user data from the target market with data from the core market, Google could acquire a large range of capabilities. These efficiencies are generally even greater when the acquirer puts a lot of money and resources into the target's innovation to improve it before integrating it. This was, for example, also confirmed by Google's acquisition of Keyhole, a company specialised in street-level maps. The technology giant invested immense sums of money in improving and expanding the reach of the map before integrating it into Google Maps and offering its services for free.⁴⁰² Therefore, this example demonstrates that integration can indeed be beneficial from an efficiency

³⁹⁶ Baker James, 'Rebalancing the Scales: Is a New Framework Needed to Assess Antitrust Risk' (*Frontier Economics*, October 2019) <<https://admin.frontier-economics.com/media/2zhggost/rebalancing-the-scales.pdf>> accessed 27 December 2023.

³⁹⁷ Marty and Warin, 2.

³⁹⁸ See Mandel and Carew, 7; Deller et al., 27.

³⁹⁹ Cassiman et al., 197.

⁴⁰⁰ Pérez de Lamo, 52.

⁴⁰¹ *ibid.*

⁴⁰² For more information, see Kumparak Greg, 'How a Google side project evolved into a \$4B company' (*TechCrunch*, 29 March 2019) <<https://techcrunch.com/2019/03/29/how-a-google-side-project-evolved-into-a-4b-company/>> accessed 27 December 2023.

perspective and that the line between business acumen and anti-competitive intentions can be very thin, especially where the acquisition primarily aims at the integration of the target.

Another aspect often mentioned in connection with killer acquisitions is that the very prospect of being acquired by an incumbent is an important element of VC markets since, as described above, it is one of the main exit routes for investors and provides an incentive for the private financing of high-risk innovation.⁴⁰³ Among other things, buy-out prices are often higher than the expected (short-term) profits of a nascent company that decides to stay independent.⁴⁰⁴ Accordingly, if start-ups were not allowed to sell their companies anymore, it may generally negatively affect innovation as fewer founders and investors would be willing to invest time and resources in innovation activities. In other words, investors often anticipate their takeover after the project is developed, which increases their willingness to fund a nascent firm they would otherwise not have financed.⁴⁰⁵ Limiting entry-for-buyout acquisitions could thus increase the risk that innovation efforts are reduced too.⁴⁰⁶ The study conducted by Phillips and Zhdanov, where data from almost 13,000 companies operating across 181 different industries was analysed, provides insightful evidence that M&A can have significant positive effects on R&D activities by small companies,⁴⁰⁷ thereby nicely summarising the observations made within this subsection.

3.2. Negative Effects

While start-up acquisitions whereby the product or service is integrated post-transaction can often have pro-competitive and pro-innovative effects, they may also adversely affect competition and innovation under certain circumstances.

In general, acquisitions of nascent companies, which either lead to the killing or foregoing of potential future competition, allow incumbents to reduce costly streams of uncertainties that may have arisen in the absence of the acquisitions. In other words, they enable incumbents to save costs that, for instance, may have had to be spent on time-consuming R&D, expensive market-

⁴⁰³ See [Part II: Chapter 1: A. 2.3.](#)

⁴⁰⁴ In this regard, consider also the discussion led in [Part II: Chapter 1: A. 2.3.](#)

⁴⁰⁵ Fumagalli, Motta and Tarantino, 3.

⁴⁰⁶ For more information on entry-to-buyout strategies, see also Rasmusen, 281-299; Hollenbeck, 1-37.

⁴⁰⁷ Phillips and Zhdanov, 1-63.

ing and sales strategies necessary to avoid either new entrants to steal market shares from it (traditional killer acquisitions) or stand a chance to successfully launch the innovation in the first place (reverse killer acquisitions). Thus, killer acquisitions help acquirers jump out of the uncertainty ‘frying pan’⁴⁰⁸ in order to prevent disruption from arising, thereby preserving their status quo. At the same time, they allow the acquirer to prevent a weaker rival from gaining access to the target’s innovation project, which holds the potential to endanger the long-term viability of the competitor by widening the technology gap.⁴⁰⁹ These factors combined reinforce existing market structures, allowing established companies to incessantly expand their power and raise barriers to entry.⁴¹⁰ Consequently, incumbents are put in an even better position to exploit consumers either directly or indirectly, for instance, by increasing prices, adding more advertisements or changing the Terms and Conditions in their favour.⁴¹¹

The reinforcement of the existing market structure may be further exacerbated by the stimulation of entry-for-buyout acquisitions. As stressed by Caffarra, Crawford and Valletti, “[a] buyout of a promising nascent/small innovator deprives the world of that innovator’s contribution *in an alternative scenario*—an IPO, a sale to another buyer or some other version of the future—in which it would have competed with an innovation developed and implemented by the buyer.”⁴¹² In other words, by allowing killer acquisitions, competition authorities disincentivise incipient firms to grow independently, which in turn would stimulate competition in the market.

What is more, and as already touched on in the preceding section, killer acquisitions can negatively affect both the level of innovation and the direction of innovation.⁴¹³ For instance, in their theoretical work, Bryan and Hovenkamp show that start-ups usually try to distort innovation towards the incumbent companies to increase their chances of an attractive buy-out deal. In this respect, the prospect of being acquired may harm innovation both by encouraging sustaining innovation and disincentivising companies to pursue disruptive innovation, whereby a small, innovative company successfully challenges an

⁴⁰⁸ See Stigler (1975), 113.

⁴⁰⁹ Bryan and Hovenkamp (2020a), 629 and 632.

⁴¹⁰ Barriers to entry are generally rather high in digital markets as described in [Part I: Chapter 2: B. 2.](#)

⁴¹¹ Note that privacy concerns resulting from amended Terms and Conditions will not be further discussed within this thesis as otherwise it would exceed its scope.

⁴¹² Caffarra, Crawford and Valletti, 15.

⁴¹³ [Part II: Chapter 2: D. 2.](#), see also Bourreau and de Streel (2020), 11.

established incumbent business.⁴¹⁴ Accordingly, to some extent, current entry-for-buyout incentives hamper the ‘neutral’ innovation process and promote more feature-driven innovation instead of systemic disruption. Moreover, they lead to new entrants avoiding valuable head-to-head competition, potentially leading to breakthrough technologies.⁴¹⁵ In fact, by being acquired at an early stage, nascent ideas are not given the time to grow—a prerequisite that is indispensable for innovation to truly stand a chance to disrupt the market structure, as was highlighted in the preceding subsection.⁴¹⁶ Companies like Microsoft, Alphabet and Meta are the best examples to show that the real impact comes from what an investor does over a long period by promoting, shaping and finally continuously scaling the firm from the seed stage through IPO and thereafter. Knee—a Columbia Business School professor—highlights, “[t]he growth paths of most great businesses look like ringworm—they started with an inner ring and built out to the next ring of customers and then the next.”⁴¹⁷

To paint a clearer picture of the negative effects of killer acquisitions on a market level, it is worth looking at the following example: if the start-up A had an innovation that was very similar to B’s existing technology, the market entry of A would likely impact B’s sales as some customers may want to switch to the new entrant which, in the worst case, may provoke negative network effects. Hence, in B’s view, it may be less costly to buy A at an early stage and discontinue it thereafter instead of having to compete with it. This would be a typical scenario of a traditional killer acquisition.

The situation is similar where B wants to independently enter the same market in which A already operates. Here, A’s market presence may hamper B’s entry as it also needs to win some of A’s customers in order to succeed. Thus, it may be easier for B to buy A before it enters the market. Thereby, the acquisition not only facilitates market entry but also allows B to get hold of A’s users so that it may better steer them towards its own innovation after a potential shutdown of A’s innovation. This strategy, for instance, seems to have been applied to Google Wallet: before launching its own innovation, Google bought

⁴¹⁴ Bryan and Hovenkamp (2020a), 615–631.

⁴¹⁵ Christensen Clayton M., Raynor Michael E., and McDonald Rory, ‘What is Disruptive Innovation?’ (*Harvard Business Review*, December 2015) <<https://hbr.org/2015/12/what-is-disruptive-innovation>> accessed 27 December 2023.

⁴¹⁶ [Part II: Chapter 2: D. 2.](#)

⁴¹⁷ Knee Jonathan in ‘Can Big Tech Be Disrupted? A conversation with Columbia Business School professor Jonathan Knee by Alison Beard’ (*Harvard Business Review*, January–February 2022) <<https://hbr.org/2022/01/can-big-tech-be-disrupted>> accessed 27 December 2023.

Softcard, which was a mobile app that enabled its users to make payments with their cell phones. Google discontinued the target only three months post-transaction and replaced it with its own innovation, that is, Google Wallet.⁴¹⁸ In such cases, the harm is rather obvious since innovation is being killed, and the range of choice and variety is being shortened. It is worth specifying that the variety may be affected to the extent that, although the products or services of the merging parties are virtually the same, the design or the user base may still differ. As a result, consumers have fewer viable options, which may eventually lead to value extraction on the part of incumbents in the long term.⁴¹⁹ Moreover, where the market is not competitive, and thus where there are not many other (potential) rivals in the market, killer acquisitions can also adversely affect the quality of the product or service since the incumbent may be disincentivised to further improve or develop the acquired innovations. After all, there may be no competitive streams anymore that could challenge the existing product or service. In this respect, it seems that killer acquisitions harm competition by reducing the choice and diversity of innovation and possibly also limiting the acquirer's investments in quality.

These observations could also apply to instances where the target's efforts are integrated, and the acquirer's own innovation efforts are either killed or simply foregone, i.e., in instances of reverse killer acquisitions. Where the innovation of the incumbent is killed post-transaction, the effects are similar to the aforementioned scenarios as it involves an act of termination of an existing product or service. This may be slightly different regarding situations where innovation is foregone, i.e., where the acquirer has no innovation in the pipeline yet, which, as established earlier, may be the most common scenario in digital markets.⁴²⁰ An illustrative example is Meta's acquisition of the VR technology company Oculus in 2014: by acquiring the up-and-coming firm, Facebook did not have to engage in costly R&D and, simultaneously, could prevent potential competition that would have arisen in the absence of the transaction and potentially would have disrupted its existing services. After all, there existed rumours that before the takeover, the target had planned to build an indepen-

⁴¹⁸ Wright Mic, 'Softcard is shutting down on March 31 and will be replaced by Google Wallet' (*The Next Web*, 5 March 2015) <<https://thenextweb.com/news/softcard-is-shutting-down-on-march-31-and-will-be-replaced-by-google-wallet>>; Welch Chris, 'Softcard is shutting down on March 31st, and Google Wallet will replace it' (*The Verge*, 5 March 2015) <<https://www.theverge.com/2015/3/5/8152801/softcard-shutting-down-march-31>> both accessed 27 December 2023.

⁴¹⁹ Ezrachi and Stucke (2022), 35.

⁴²⁰ This was established in [Part II: Chapter 2: B.](#)

dent social network for its virtual reality community.⁴²¹ This acquisition presumably allowed Meta to avoid potential competition whilst getting hold of the next generation of communication-intensive hardware, thereby creating its own user touch point for its social media platform Facebook. Although the line to the ‘buy-or-make’ argument is admittedly thinner in cases where R&D is just forgone rather than discontinued, Meta’s acquisition of Oculus shows that economic harm can nevertheless occur since it allowed the incumbent to considerably influence the direction of the innovation’s development. Put differently, even where the acquirer does not seek to terminate an existing innovation, the transaction can allow the acquirer to control the target’s project, thereby internalising the competitive threat that it poses or may have posed. However, such harm may generally be more difficult to ascertain at the time of the transaction as innovation is merely foregone and the incumbent’s entry assumed without there being proof that the acquirer would have successfully entered the market in the absence of the acquisition. As explained in more detail above, mergers are instruments for growth and, therefore, an integral part of the competitive strategy of most companies.⁴²² Accordingly, they are usually a legitimate tool for companies to expand. Forbidding incumbent firms to acquire nascent companies because it may be better for innovation if they developed the product or service themselves calls into question the very legitimacy of allowing M&A. Ultimately, it is a policy question, which will be further discussed in Part IV, as it largely depends on what the Commission wants to achieve with its merger control regime and how harmful it considers the fact that large incumbents can act as architects of digital markets.

E. Interim Summary

This chapter sought to create a more profound economic understanding of killer acquisitions in digital markets. For this reason, it first shed light on the rationale of traditional killer acquisitions and analysed whether the conditions of such transactions also apply to killer acquisitions in digital markets. It concluded that killer acquisitions in digital markets are often not operating in the same market, nor do they commonly lead to the termination of the acquired innovation. Instead, they more frequently occur in the form of reverse killer acquisitions whereby the target is integrated. This led to the assessment of

⁴²¹ Reiter Jakob in der brutkasten, ‘#rooftop.talk: Killer Acquisitions und Wettbewerbsrecht’ (YouTube, 13 August 2020) <<https://www.youtube.com/watch?v=qmlPZofzZno>> accessed 27 December 2023.

⁴²² See [Part II: Chapter 1: A](#).

the rationale of such transactions, where it was established that incumbents commonly apply this acquisition strategy to tame potential future competitive or disruptive threats whilst further strengthening and expanding their market position. To better understand the impact of such acquisitions on competition and innovation, the subsequent sections delved into a detailed review of the economic literature. It found that although digital markets require incumbents to constantly innovate due to high market dynamics and thus contain elements of Schumpeter's theory, the fact that competition occurs for the market rather than in markets gives room for Arrow's replacement effects, although in a flipped version. More precisely, it incentivises dominant companies to reduce their own innovation efforts and acquire promising companies, thereby minimising the risk of the rise of potential disrupters that may have threatened their market position. This also reflects in the empirical evidence showing that despite incumbents' high R&D spending, they generally invest in sustaining innovation and therefore less in R&D intensity—the hallmark of disruption. Disruption is only welcomed where it occurs outside incumbents' core business, meaning to the extent that it does not undermine their existing value chains and affect their profits. While, on a macro-level, killer acquisitions seem to especially harm the emergence of disruptive innovation by allowing incumbents to control emerging markets, a more nuanced analysis of the positive and negative effects of killer acquisitions on the market level shows that killer acquisitions in digital markets do not always have adverse effects on innovation and competition but can also benefit them. This observation adds layers of complexity to the legal test as it requires a thorough case-by-case analysis, the outcome of which may often be less straightforward than in traditional killer acquisitions, such as those commonly found in pharmaceutical markets. In turn, precisely because the effects of killer acquisitions in digital markets may often not be clear-cut, it is indispensable for the purpose of this thesis to discuss the error cost framework, which will be addressed in the following chapter.

Chapter 3: The Error-Cost Framework and Killer Acquisitions

As highlighted in the previous chapter, killer acquisitions in digital markets may often exhibit ambiguous effects on competition and innovation and may, therefore, commonly leave the European Commission with transactions whose effects are not straightforward. In turn, this raises the question of how the Commission should decide in such cases, i.e., whether it should rather lean towards over or underenforcement. Answers to this question may be found in the error-cost framework, which was conceptualised to inform about actions with uncertain consequences by considering the expected costs of making erroneous decisions. Hence, this chapter is dedicated to analysing the error-cost framework in light of killer acquisitions.

A. Error-Cost Analysis

Whilst the error-cost analysis originally stems from the US, it also deeply influenced competition authorities across the world, including the European Commission. It plays a particularly important role in the context of merger control as its forward-looking nature is particularly error-prone.⁴²³

1. Introduction to Type I and II Errors

The error-cost analysis was developed by advocates of the Chicago school of thought and was first employed in the law and economic literature by Ehrlich and Posner in the 1970s.⁴²⁴ It was created to consider the costs arising from erroneous decisions due to prevailing imperfect information. To this end, the error-cost analysis takes into account (i) costs of Type I errors, i.e., erroneous condemnations, (ii) costs of Type II errors, which err on the side of non-interventions and (iii) transactions cost arising from the use of the legal process.

⁴²³ Devlin and Jakobs, 86.

⁴²⁴ Ehrlich and Posner, 272, finding that “[t]he model is based on a social loss function having, as its principal components, the social loss from activities that society wants to prevent, the social loss from the (undesired) deterrence of socially desirable activities, and the costs of producing and enforcing statutory and judge-made rules, including litigation costs. Efficiency is maximized by minimizing the social loss function with respect to two choice variables, the number of statutory rules and the number of judge-made rules.”

Within this framework, false positives and false negatives are considered to have harmful effects on the economy going beyond the case in question as, on the one hand, they may chill the beneficial effects of other market actors to which the same rule would apply post-transaction and, on the other hand, they fail to deter potential future harmful conduct by other economic actors that must comply with the competition rules.⁴²⁵ This raises the question of which of these unfavourable outcomes is generally to be viewed as less harmful.

2. Advocates of Type II Errors

Advocates of the Chicago school of thought consider that competition authorities and courts should generally lean towards Type II errors, i.e., false negatives, because markets are naturally competitive and thus need only little intervention from the state. They view false positives resulting from Type I errors as socially more costly than chilling beneficial conduct. Judge Frank Easterbrook famously stated, “If judges tolerate inefficient practices, the wrongly-tolerated practices will disappear under the onslaught of competition. The costs of judicial error are borne by consumers, who lose the efficient practices and get nothing in return.”⁴²⁶ Thus, in his view, erroneous rejections of consumer-welfare-enhancing conduct eliminate their benefits as long as the prohibitive rule is in force.⁴²⁷ Similarly, Evans and Padilla found that “if an anti-competitive business practice is mistakenly permitted, the resulting monopoly profits attract competition and new entrants, at least in the long run [...]. By contrast, market forces play a little corrective role for pro-competitive business practices deemed anti-competitive.”⁴²⁸ According to their line of reasoning, Type II errors can quickly be corrected by the growth of competitors or new entrants, whereas Type I errors are widely viewed to reduce and potentially even kill innovation. They are therefore considered to be generally more harmful to the welfare.

⁴²⁵ Baker (2015), 5–6 with further remarks.

⁴²⁶ Easterbrook (1984), 21.

⁴²⁷ Easterbrook (1987), 986.

⁴²⁸ Evans and Padilla, 84.

3. Influence on Merger Control

One area of law that has been particularly influenced by the above-mentioned perception of Type I and II errors held by advocates of the Chicago school of thought is merger control. In fact, it has led various competition regimes across the world to shy away from aggressive enforcement strategies for many years, including the European Commission. For instance, this was demonstrated in the empirical study conducted by Duso, Gugler and Szücs in 2013, according to which the European Commission has made errors of Type II in approximately two-thirds of all the M&A cases ever since its last reform in 2004.⁴²⁹ This tendency to lean towards non-intervention is also reflected in the data published by the European Commission in 2020, showing that out of 361 transactions notified, only one was prohibited.⁴³⁰ Furthermore, in 2021, the European Commission intervened in 14 cases out of a total of 396 notifications, eleven of which were approved under condition.⁴³¹ In 2022, it adopted 368 merger decisions of which twelve transactions were approved subject to conditions and two were prohibited.⁴³² Similar findings were also made in the UK. The Furman Report found that “to date, there have been no false positives in mergers involving the major digital platforms, for the simple reason that all of them have been permitted.”⁴³³ Indeed, between 2014 and 2019, over 250 acquisitions were undertaken in the UK, none of which was investigated in Phase I or II. The Furman Report further reveals that although the Competition and Markets Authority considered reviewing approximately 30 transactions, it did not further follow them as, in each case, it saw no need to do so.⁴³⁴

These few examples show that, at least until recently, merger control regimes in Europe generally adopted rules and practices that weigh against antitrust intervention, ultimately leading competition authorities and courts to more often clear mergers that may have anti-competitive effects than banning them. Put differently, taking the risk of prohibiting acquisitions that may benefit competition has frequently not been considered a valid option. In turn, this raises the question of how this tendency is to be viewed in killer acquisitions.

⁴²⁹ Duso, Gugler and Szücs, F596-F619.

⁴³⁰ EC, Annual Activity Report 2020, 22.

⁴³¹ EC, Annual Activity Report 2021, 32.

⁴³² EC, Annual Activity Report 2022, 30.

⁴³³ Furman Report, 91.

⁴³⁴ *ibid.*

4. Application to Killer Acquisitions

Although the bias towards Type II errors may be justified in certain cases, the arguments favouring Type II errors seem ill-suited in killer acquisition cases. This is because, by pre-empting potential new entrants at an early stage, such cases threaten the very parameter that is supposed to correct Type II errors. In other words, by letting established companies take out potential future competition at an early stage, the assumption that markets self-correct through new entrants may not apply. Accordingly, the self-discipline argument of anti-competitive behaviour seems to not work for markets where large firms commonly strive to keep potential competitors in check through killer acquisitions. In fact, favouring Type II errors in such environments may eventually leave “companies to mate as they wished”, as was already found in 2007 by the Wall Street Journal.⁴³⁵

Based on these observations, a growing body of economic theory and empirics has started increasingly paying attention to the negative impacts start-up acquisitions can have on competition and innovation and considering their implications on the cost-error framework. For instance, the Lear Report underscores that the risk of underenforcement is insufficiently emphasised to date and that this can have significant adverse effects on competition.⁴³⁶ In this context, some authors also point out that the non-interventional approach to Type II errors allows industry leaders to further expand the gap to smaller companies, ultimately causing high concentration.⁴³⁷ This is also found in the Stigler Report, which additionally highlights that the harm from false negatives is greater in markets that tend to lean towards monopolisation,⁴³⁸ as is the case for digital markets.⁴³⁹

Overall, it can be deduced from these findings that the overly precautionous belief of Type II error is not suited to preserve innovation and that avoiding the allegedly perpetual loss of efficiencies created by Type I errors may further exacerbate the concentration challenges that digital markets are currently facing. In fact, the long-standing trend of favouring Type II errors may have

⁴³⁵ Berman Dennis, ‘How to Assess 2007’s M&A Activity’ (*The Wall Street Journal*, 16 January 2007) <<https://www.wsj.com/articles/SB116890180735777039>> accessed 27 December 2023.

⁴³⁶ See Lear Report, 44.

⁴³⁷ See, for instance, Bryan and Hovenkamp (2020a), 617.

⁴³⁸ Stigler Report, 16; see also OECD (2020a), 16.

⁴³⁹ This can be traced back to the combination of features of digital markets, see [Part I: Chapter 2: A](#).

contributed to reinforcing the vicious cycle of incentives to engage in M&A described in [chapter 1 of this Part](#) and consequently to the fact that companies in digital markets are increasingly operating under the influence of technology behemoths. Accordingly, it may be time for the European Commission and the European Courts to rethink their reluctant approach towards merger control in digital markets by increasing ‘the appetite’ for taking greater risks to make Type I errors, thus prohibiting potentially efficiency-enhancing or efficiency-neutral acquisitions. To this end, they need to seriously consider the costs of anti-competitive conduct instead of overly focusing on the chilling pro-competitive effects acquisitions may bring about.

B. Benefits of Leaning More Towards Type I Errors

By choosing a path leaning more towards Type I errors, i.e., taking the risk of blocking a potentially pro-competitive merger, the notifying parties may be encouraged to take into account their ‘second-best option’, which, in certain circumstances, can create even more social gains in the long run.⁴⁴⁰ For instance, provided the *Facebook/Instagram* acquisition had been reviewed, the blocking of the transaction could have led both companies to explore their second-best option. Concretely, it may have incentivised Facebook to significantly improve its existing platform or even develop a new platform in order to stand out against the up-and-coming company. Instagram and its investors, on the other hand, may have continued innovating and growing independently or, alternatively, they could have found another acquirer whose acquisition would have raised fewer concentration concerns.

Facebook’s acquisition of Oculus provides another illustrative example: it is said that before Facebook’s takeover of Oculus—a company which has become famous for its virtual reality headsets, as mentioned earlier⁴⁴¹—the target had planned to build an independent social network for its virtual reality community. This social network presumably aimed to enable consumers to exchange thoughts, ideas and experiences through its technology. However, after Facebook’s acquisitions, the technology giant tied Oculus to its social media platform, requiring users that want to use the VR technology to log in via their

⁴⁴⁰ The fact that a positive innovation curve post-transaction does not necessarily mean that the situation would not have developed even more positively without the conclusion of a deal is an aspect that proponents of Type II errors often ignore.

⁴⁴¹ See [Part II: Chapter 2: D. 3.2.](#)

Facebook accounts.⁴⁴² It is probable that by increasingly binding the idea of creating an (independent) virtual reality chat to its parent company, Facebook significantly influenced the development of the innovation. Now, assuming that the merger could have been banned by taking a stricter approach toward Type I error, thus taking the risk to block a pro-competitive transaction,⁴⁴³ it may have led Oculus to consider other options, such as growing further independently or merging with a smaller company. This could have led to a different innovation outcome as it may have enabled Oculus to create an independent platform for its community that would have been completely detached from existing social media services. On the other hand, it may have also incentivised Facebook to start developing a competing service, thereby attracting its own users by actively engaging in competition on the merits. Instead, the transaction has allowed the social media giant to become an early key player in the VR ecosystem, enabling it to largely design the VR markets in a way that favours it best.⁴⁴⁴

This mental exercise can also be applied to other examples, such as Facebook's acquisition of WhatsApp or Google's acquisition of Waze. Moreover, the rationale behind the second-best argument could be further extended to other sectors where killer acquisitions occur. However, given that this thesis only focuses on digital markets, they will not be further elaborated on. Cut to the chase, it can generally be said that if, in case of doubt, competition authorities started taking the risk of more often wrongly condemning pro-competitive behaviour, it could more effectively protect the process of innovation whilst giving start-ups and their investors an opportunity to contemplate other paths, which would have otherwise not been taken into account since acquisitions often represent the most straightforward and convenient solution.⁴⁴⁵ As already shown in the aforementioned examples, alternatives could be, for instance, to sell the business to a small or medium-sized company or

⁴⁴² Hamilton Ian, 'Facebook Starts Rolling Out Messenger To Oculus Quest' (*Upload VR*, 2 February 2021) <<https://uploadvr.com/facebook-messenger-oculus-quest-2/>> accessed 27 December 2023. Note, however, that the mandatory Facebook login was eventually removed in 2022. Users still have to use a Meta account, though, see Crider Michael, 'The Meta Quest 2's non-Facebook accounts are a blatant bait-and-switch' (*PC World*, 23 August 2022) <<https://www.pcworld.com/article/836195/quest-2-non-facebook-accounts-are-a-bs-bait-and-switch.html>> accessed 27 December 2023.

⁴⁴³ Of course, this presupposes that there would have been sufficient legal grounds for the ban and that the thresholds had been met, which, for the sake of simplicity, is assumed to be given in this example.

⁴⁴⁴ For more information on how incumbents can influence the shape of emerging markets by acquiring nascent firms, see [Part II: Chapter 2: D. 2.2.](#)

⁴⁴⁵ Delvin and Jacobs, 98.

grow independently by finding more investors, the latter of which may become increasingly easier given the growing VC market discussed above.⁴⁴⁶ In any way, competition authorities' more vigorous pursuit of Type I errors could push firms to reconsider their options. This may lead to surprisingly positive outcomes and could eventually hold the potential to change small and medium-sized companies' (SME) business culture to become more active in acquiring start-ups and small companies themselves.⁴⁴⁷ Ultimately, this would contribute to narrowing the enormous prevailing gap between the powers of leading technology companies and smaller firms and, to some extent, 'disempower' existing market structures.⁴⁴⁸ In short, it would contribute to 'freeing' digital markets from the dependency of large companies, which, as ascertained above, are often designing the digital world in ways that favours them the most.⁴⁴⁹

C. Interim Summary

This chapter sought to give the reader a broad overview of the error-cost framework. To this end, it first introduced the concept of this framework, which was developed by the Chicago school of thought in the 1970s. Thereafter, it analysed its influence on merger control and found that the prevailing perception that Type II errors are socially less costly is flawed. This particularly applies to killer acquisitions as by letting incumbents purchase nascent firms in cases of uncertain outcome, the very assumption that markets self-

⁴⁴⁶ [Part II: Chapter 1: A. 2.3](#). See also Schrepel, 'The Effect of Venture Funding on Killer Acquisitions' (*Network Law Review*, 7 November 2022) <<https://www.networklawreview.org/killer-acquisitions-venture/>> accessed 27 December 2023, who finds that "we are in the middle of VCs' golden age".

⁴⁴⁷ In fact, this is a trend that has been increasingly witnessed from 2021 onwards. According to Crunchbase, in 2021, 1,283 transactions involved nascent companies only. Compared with the numbers of the preceding years, that is, 689 in 2020 and 699 in 2019, start-up acquisitions seem to have become an ongoing trend, see Szkutak Rebecca, 'Startups are on track to acquire more VC-backed companies than ever in 2022. Here's why' (*Crunchbase*, 7 June 2022) <<https://techcrunch.com/2022/06/07/startups-are-on-track-to-acquire-more-vc-backed-companies-than-ever-in-2022-heres-why/>> accessed 27 December 2023.

⁴⁴⁸ For more information on the gap between large and small companies, see Vijay Govindarajan, Baruch Lev, Anup Srivastava, and Luminita Enache, 'The Gap Between Large and Small Companies Is Growing. Why?' (*Harvard Business Review*, 16 August 2019) <<https://hbr.org/2019/08/the-gap-between-large-and-small-companies-is-growing-why/>> accessed 27 December 2023.

⁴⁴⁹ [Part II: Chapter 2: D. 2.2](#).

correct through new entrants is threatened. Based on this finding, this chapter found that it would be more beneficial if the European Commission and the European Courts leaned more towards Type I errors in such cases, thereby forcing companies in digital markets to take into account their second-best option. Such an approach could also contribute to breaking the vicious cycle of incentives that continuously strengthens existing market structures.

Summary

Digital markets are characterised by high dynamics that require companies to constantly build, integrate and reconfigure internal and external competencies. Accordingly, firms need to sense and shape opportunities and recognise potential threats at an early stage. From the perspective of incumbents, one efficient way to do so is to acquire promising start-ups. This is because, whilst leading technology companies are better at exploiting R&D, nascent firms have an advantage in exploring innovation. Viewed like that, M&A not only benefit incumbents but also create a beneficial situation for start-ups, allowing them to benefit from incumbents' vast resources and escape uncertainty that would have prevailed in the absence of the transaction. Whilst creating a seemingly win-win situation, these incentives to engage in M&A also foster existing market structures, thereby allowing large technology companies to increasingly steer emerging markets in such a way that helps them sustain their value chain and profits.

This is when killer acquisitions come into play. Although the phenomenon was originally first witnessed in the pharmaceutical sector, they also occur in digital markets. Unlike in pharmaceutical markets, incumbents operating in digital markets more commonly use them in a flipped version by either discontinuing or foregoing their own innovation efforts. As a result, killer acquisitions in digital markets are frequently neither purely horizontal nor do they commonly lead to the termination of the nascent firm's innovation. This also affects the main rationale behind such transactions as incumbents frequently apply them to prevent potential future threats from growing independently whilst allowing them to more effectively enter the target's market, thereby exacerbating the expansion of the existing efficiencies of scope. In turn, this leads to an increasingly centralised innovation process, where diversity and pluralism of independent innovation are increasingly lost and where emerging markets are more and more shaped by the existing market structure as opposed to the other way around. However, whereas the effects on a macro-level are rather straightforward, a closer look at killer acquisitions shows that, on a market level, such transactions may also bring about pro-competitive effects by, for instance, creating synergies and efficiencies. Accordingly, the assessment of harm in killer acquisition cases in the digital market is generally less clear-cut than traditional killer acquisitions, requiring a more differentiated, case-by-case analysis.

Given that the assessment of killer acquisitions in digital markets is often fraught with significant uncertainty, making them generally more prone to erroneous decisions, the consideration of the error-cost framework is particularly important in such cases. Considering the harm such transactions can cause, this Part found that it makes sense to opt for a more interventionist approach in instances where start-ups are involved. This is because by preventing new entrants from growing independently, the very assumption favouring Type II errors that entry leads markets to self-correct is jeopardised. Hence, rather than adopting a Type II bias, it would be welcome if the European Commission and the European Courts took a stronger interventionist approach when assessing killer acquisitions. After all, by doing so, they may force companies to consider their second-best option, which could eventually also contribute to breaking the current vicious cycle of incentives reinforcing existing market structures.

Part III:

Legal Analysis

Chapter 1: Legal Analysis of the EUMR

In the preceding Part, it was established that killer acquisitions in digital markets can harm competition and innovation. Hence, this chapter seeks to assess whether the legal tools at the European Commission's disposal are apt to spot such harms. To this end, it will scrutinise the existing framework by individually looking at the three pillars of the EUMR, namely (i) jurisdictional, (ii) procedural and (iii) substantial questions. Moreover, it will also consider the current remedies framework, thereby assessing its effectiveness in light of killer acquisitions. It should be noted that this chapter exclusively aims to ascertain the main challenges such transactions pose to the current framework and will not yet discuss any possible amendments to render it more effective. This will be the subject of Part IV.

A. Jurisdictional Questions

This subchapter aims to analyse how the European Commission tackles jurisdictional questions. To this end, it looks at the different elements required for a transaction to fall within the Commission's competence, that is, (i) the presence of at least two undertakings that lead to (ii) a concentration which (iii) has a Community dimension. The following sections will analyse these conditions individually.

1. Concept of Undertakings

The EUMR only covers concentrations between at least two undertakings. The term 'undertaking' was primarily developed under the case law of Art. 101 and 102 TFEU, the findings of which are, however, mutually applicable to the EUMR.⁴⁵⁰

⁴⁵⁰ See Käseberg in Bunte, Art. 3 EUMR, paras. 8–9; Wessely and Wegner in Säcker/Bien/Meier-Beck/Montag, Art. 3 EUMR, para. 7.

1.1. Definition of the Term ‘Undertaking’

According to settled case law, an undertaking refers to any “entity engaged in an economic activity, regardless of the legal status of the entity and the way in which it is financed”.⁴⁵¹ The term ‘economic activity’ merely requires the undertaking to offer goods and services in a given market.⁴⁵² The legal status of the undertaking is thereby irrelevant, i.e., it does not matter whether it is a natural or legal person.⁴⁵³ Purely public activities are, however, not caught by the concept of undertakings.⁴⁵⁴

1.2. Application to Killer Acquisitions

In the context of killer acquisitions, the concept of undertakings does generally not pose any problems. This is because both the incumbent and the start-up are typically entities that engage in economic activities. Whilst, as established in Part II, generally not (yet) active in the same market as the incumbent,⁴⁵⁵ they are typically already operating in a market at the time of the transaction, thereby engaging in economic activities. A few famous examples are provided by Facebook’s acquisitions of WhatsApp and Oculus or Google’s purchases of Waze and Softcard. In general, it can therefore be concluded that the notion of undertakings according to the EUMR does not pose any challenges to the assessment of killer acquisitions, which is why it will not be further elaborated on within this thesis.

2. Concentration

According to Art. 3(1) EUMR, the Regulation requires the presence of a concentration. Concentration arises where there is a ‘change of control on a lasting basis’.

⁴⁵¹ Case C-41/90 *Höfner and Elser v Macrotron*, para. 21.

⁴⁵² Case 118/85 *Commission v Italy*, para. 7.

⁴⁵³ *ibid.*

⁴⁵⁴ Case C-364/92 *SAT Fluggesellschaft v Eurocontrol*, paras. 15–17.

⁴⁵⁵ See [Part II: Chapter 2: B. 1.](#)

2.1. Defining the Term ‘Control’

The term ‘control’ refers to an ability to exercise decisive influence over an undertaking on a lasting basis.⁴⁵⁶ Decisive control describes the power to decide actions which determine the strategic commercial behaviour of an undertaking.⁴⁵⁷ It is, however, not necessary to demonstrate that decisive influence will be actually exercised—it suffices that the possibility of exercising the influence in question is effective.⁴⁵⁸ In addition, the concept of control requires that transactions lead to a lasting change in the market structure.⁴⁵⁹ Accordingly, neither temporary changes of control⁴⁶⁰ nor internal reorganisations are caught by the EUMR.⁴⁶¹ The European Commission assumes a permanent change if the transaction process is indefinite, as is typically the case with shares and asset acquisitions.⁴⁶²

2.2. Different Forms of Control

A change of control, and thus the rise of concentration, can occur in different forms, including:⁴⁶³

- i. The merger of two or more previously independent undertakings or parts of undertakings.
- ii. The acquisition by one or more undertakings, directly or indirectly, of the whole or parts of another undertaking.

The main difference between these forms of control is that the latter results in a relationship of subordination between the acquirer and the target, whereas in the former scenario, both companies are still operating on the same level post-transaction.⁴⁶⁴

⁴⁵⁶ Art. 3(2) EUMR.

⁴⁵⁷ EC, Jurisdictional Notice, para. 62. Note that in practice, this criterion hinges on several legal and/or factual elements, see Boyce and Lyle-Smythe, para. 8.027.

⁴⁵⁸ EC, Jurisdictional Notice, para. 16.

⁴⁵⁹ Art. 3(1) EUMR; Jurisdictional Notice, Recital 20.

⁴⁶⁰ EC, Jurisdictional Notice, para. 28.

⁴⁶¹ *ibid.*, para. 51.

⁴⁶² Käseberg in Bunte, Art. 3 EUMR, para. 27.

⁴⁶³ Art. 3(1) (a) and (b). Note that a concentration may also occur in the form of a joint venture according to 3(4) EUMR. This form of concentration will, however, not be further explained as it is considered irrelevant to the topic of this thesis.

⁴⁶⁴ Körber in Immenga/Mestmäcker, Art. 3 EUMR, paras. 14 and 25.

2.3. Sole and Joint Control

The EUMR encompasses both acquisitions of sole and joint control. Sole control is typically achieved when an undertaking acquires a majority of the voting rights of another undertaking, giving the acquiring company the power to exercise decisive influence over the target undertaking. Alternatively, sole control can also occur when the acquiring undertaking is solely able to determine key strategic business decisions of the target, disregarding the potential objections of the other shareholders. In other words, sole control may also be found where the acquirer has the power to reject decisions and give it a say in strategic decisions. This may include, for instance, decisions over the budget, the business plan or major investments.⁴⁶⁵

In contrast, joint control refers to a situation where two or more undertakings can each exercise decisive influence over another undertaking. The merging companies have therefore joint control of that undertaking.⁴⁶⁶

2.4. Means of Acquiring Control

According to Art. 3(2) EUMR, “[c]ontrol shall be constituted by rights, contracts or any other means which, either separately or in combination and having regard to the considerations of fact or law involved.”⁴⁶⁷ Art. 3(2)(b) EUMR specifies that control can be achieved by the “purchase of securities or assets, by contract or by any other means”.⁴⁶⁸ This includes “ownership or the right to use all or parts of the asset of an undertaking”,⁴⁶⁹ meaning that the EUMR also covers concentrations that only involve parts of an undertaking. In this regard, it should be stressed that for the Commission to qualify a transaction as a ‘concentration’, it is not the form or type of acquisition that is decisive but rather the result.⁴⁷⁰ As shown above, this means that one merging party needs to have the ability to exercise lasting decisive influence over the other undertaking.⁴⁷¹

⁴⁶⁵ Jurisdictional Notice, paras. 54 et seq.

⁴⁶⁶ *ibid.*, para. 62.

⁴⁶⁷ Art. 3(2) EUMR.

⁴⁶⁸ Art. 1(2)(b) EUMR.

⁴⁶⁹ Art. 3(2)(a) EUMR.

⁴⁷⁰ Körber in Immenga/Mestmäcker, Art. 3 EUMR, para. 44.

⁴⁷¹ [Part III: Chapter 1: A. 2.1.](#)

2.5. Application to Killer Acquisitions

From the above, it can be deduced that for killer acquisitions to be viewed as concentrations, the incumbent must have ‘the possibility of exercising decisive influence’ over the nascent firm, which leads to a lasting change in the market structure.⁴⁷² The transaction can either occur in the form of a merger or an acquisition. Moreover, the incumbent can acquire sole or joint control. Means of control can, for instance, be the acquisition of either all or even just parts of shares or assets of the target company.

In general, these conditions should not pose any problems to killer acquisitions since incumbents would typically exercise decisive influence over the target post-transaction, thereby affecting the market structure on a lasting basis by pre-empting the rise of a potential future competitive threat. With regard to the form of control, killer acquisitions would—as the name implies—most frequently occur in the form of acquisitions whereby either the whole start-up or just parts of it are purchased. In the end, the question of the form of the control is, however, irrelevant to the topic of this thesis as the legal consequences are the same for mergers and acquisitions. Typically, the transaction would result in sole control; otherwise, the incumbent’s strategic decision, for instance, to discontinue the target’s innovation or influence it in a way that originally was not considered by the founders and investors may be opposed. Finally, with respect to the means of control, it can be found that essentially all forms of control are applicable to killer acquisitions. As revealed by the Federal Trade Commission in its market study on acquisitions undertaken by the leading technology companies GAFAM, “Asset and Control transactions (including Voting Security Control and Non-Corporate Interest Control transactions) were the most common in each transaction range. For transactions exceeding \$5 million, the majority were Control transactions.”⁴⁷³

3. Community Dimension

In cases where the European Commission finds that the transaction in question leads to a change of control on a lasting basis, it needs to assess whether the transaction has a Community dimension according to Art. 3(1) EUMR.⁴⁷⁴ This criterion is an indispensable prerequisite to establishing whether, pur-

⁴⁷² Art. 3(2) EUMR.

⁴⁷³ FTC Study, 15.

⁴⁷⁴ See Käseberg in Bunte, Art. 1 EUMR, para. 5.

suant to the ‘one-stop-shop principle’ enshrined in Art. 21 EUMR, the Commission has exclusive competence or whether the assessment of the transaction falls within the realm of competence of the Member States.⁴⁷⁵ Put differently, the Community dimension defines (i) the EUMR’s international scope of application and (ii) the boundaries between the EUMR and the national merger control regimes.⁴⁷⁶ Transactions that meet the thresholds must be notified to the European Commission, which has the exclusive competence for transactions with a Community dimension. Conversely, if the thresholds are not met, the Member States are in charge of the transaction. This applies except where, as explained in more detail below, either the merging parties or a Member State make use of the referral rules stipulated in Art. 4(5) and Art. 22 EUMR, in which case they confer the competence of reviewing the transaction back to the European Commission.⁴⁷⁷

3.1. Defining the Turnover Thresholds

Whether a merger has a Community dimension is determined by the turnover of the concerned parties in a specific transaction. The term ‘turnover’ thereby describes the amount earned by undertakings in the preceding financial year “from the sale of products and the provision of services falling within the undertakings’ ordinary activities”.⁴⁷⁸

Pursuant to Art. 1(2) EUMR, the following two conditions must be met: (i) the combined worldwide turnover of all the merging firms involved needs to be over €5,000 million and (ii) the Community-wide turnover for each of at least two of the firms lies over €250 million. The first threshold generally pursues the purpose of establishing the overall size of the companies concerned on a worldwide basis. In contrast, the second condition ensures a minimum level of activity within the EU in order to exclude domestic transactions without a Community dimension. Accordingly, it can be deduced that Art. 1(2) EUMR has a dual function: on the one hand, by requiring that at least two of the undertakings concerned must each have a turnover of more than €250 million in the

⁴⁷⁵ Körber in Immenga/Mestmäcker, Art. 21 EUMR, para. 1.

⁴⁷⁶ *ibid.*

⁴⁷⁷ Käseberg in Bunte, Art. 1 para. 7–8. For more information, see also below [Part III: Chapter 1: B. 1](#) and [Part III: Chapter 1: B. 2](#).

⁴⁷⁸ Art. 5(1) EUMR.

EU, it establishes a direct link to the Common Market.⁴⁷⁹ On the other hand, it also includes a *de minimis* rule so that merger control does not extend to transactions that involve only small companies with low turnover.⁴⁸⁰

In addition, Art. 1(3) EUMR provides alternative thresholds for cases that do not fall within Art. 1(2) EUMR but may still have a significant impact on several Member States. Their practical relevance is, however, generally small⁴⁸¹ and will not be further elaborated on.

3.2. Rationale Behind the Turnover Thresholds

The main rationale behind the consideration of turnover-based thresholds is that whilst it is believed that low turnover transactions are not likely to harm the internal market significantly, a high turnover generally indicates changing internal market dynamics, which in turn hold the potential of impeding effective competition within the EU.⁴⁸² Following this rationale, start-up acquisitions have long not been considered major competition threats and were, therefore, not scrutinised by the European Commission. However, with the growing awareness of the importance of start-ups for competition, this rationale has undergone a considerable shift.

3.3. Application to Killer Acquisitions

Given that killer acquisitions involve nascent firms with no or only little turnover, the requirements for finding a Community dimension may often not be met in these cases. This applies, in particular, to start-ups operating in digital markets as, in their early stages, they commonly focus on rapid growth, especially of their user base, and frequently aim to monetise their user base only at a later stage, for instance, after exiting either via an IPO or an acquisition.⁴⁸³ In other words, start-ups in digital markets often do not respond to short-term decisions that immediately materialise in the market but rather invest in strategies that are more likely to materialise in the long term.⁴⁸⁴ Hence,

⁴⁷⁹ Körber in Immenga/Mestmäcker, Art. 1 EUMR, para. 13.

⁴⁸⁰ *ibid*, para. 14.

⁴⁸¹ Käseberg in Bunte, Art. 1 EUMR, para. 33; Koch in Säcker/Bien/Meier-Beck/Montag, Art. 1 EUMR, para. 34.

⁴⁸² Hatton, Gabathuler and Lichy, 2.

⁴⁸³ Bourreau and de Streel (2020), 15; see also [Part II: Chapter 1: A. 2.](#)

⁴⁸⁴ For instance, Instagram only started monetising its services through advertising three years after its acquisition by Facebook, see Lear Report, 59. See also Thiel and Masters, 45–48.

when bought at an early stage, start-up acquisitions may typically not meet the relevant thresholds, and as a result, the merging parties have no obligation to notify the Commission in such cases, despite the transaction's potential of harming competition and innovation, as discussed in Part II.⁴⁸⁵

From this observation, it can be deduced that the existing criteria for the assessment of whether a concentration has a Community dimension are generally not apt to catch killer acquisitions. The current approach, therefore, points towards an enforcement gap regarding transactions “where the turnover of at least one of the undertakings concerned does not reflect its actual or future competitive potential”.⁴⁸⁶ This was also recognised by the European Commission, whereupon it decided to amend the existing mechanism of spotting potentially harmful transactions through Art. 22 EUMR, linking directly to the following subchapter.

B. Procedural Aspects

Alongside the turnover thresholds, the EUMR provides a so-called ‘referral system’. It gives the Commission and the Member States tools for fine-tuning notifications.⁴⁸⁷ The referral system covers both pre-notification referrals at the initiative of the merging parties according to Art. 4(4) and Art. 4(5) EUMR, as well as post-notification referrals that allow the European Commission and national authorities to refer certain cases pursuant to Art. 9 and Art. 22 EUMR. Whilst Art. 4(4) and Art. 9 EUMR regulate referrals from the Commission to Member States, Art. 4(5) and Art. 22 EUMR provide for referrals to the Commission.⁴⁸⁸ The *Commission’s Notice on Case Referral in respect of concentration* lays down detailed guidelines on this reattribution system.⁴⁸⁹

Given that the focus of this thesis lies on the EUMR and not on national merger control regulations, it will only consider referrals from the Member States to the European Commission. The main emphasis will thereby be put on Art. 22 EUMR as its practice has recently been amended, specifically aiming to tackle the challenges posed by acquisitions of nascent companies. The explanations to Art. 4(5) EUMR will therefore be kept short.

⁴⁸⁵ See especially [Part II: Chapter 2: D. 3.2](#). For a Swiss perspective on the notification obligation and killer acquisitions, see Zäch and Heizmann, paras. 933 and 998.

⁴⁸⁶ Guidance on Art. 22 EUMR, para. 19.

⁴⁸⁷ Pape in Bunte, Art. 22 EUMR, para. 3.

⁴⁸⁸ Boyce and Lyle-Smythe, paras. 8.090–8.099.

⁴⁸⁹ For more information on how cases are referred in the EU, see EC, Case Referral Notice.

1. Referrals According to Art. 4(5) EUMR

Art. 4(5) EUMR sets out the conditions and procedure for referring cases to the European Commission that fall below the Community dimension thresholds and would have to be dealt with under national merger law.⁴⁹⁰

1.1. Conditions

According to Art. 4(5) EUMR, notifying parties can request that a transaction without a Community dimension is referred from the Member States to the European Commission. Such a referral presupposes that the transaction meets the conditions set out in Art. 3 EUMR.⁴⁹¹ Moreover, the transaction must be capable of being reviewed under the national competition law of at least three Member States.⁴⁹² Finally, a referral can only be accepted by the European Commission if it has not yet been notified to a national authority.⁴⁹³

In general, transactions are suitable to be referred to according to Art. 4(5) EUMR when, among other things, their potential impact on competition will be felt in markets across national boundaries. Alternatively, it can be applied when the markets affected are national or narrower, but competition concerns arise in several Member States so that the Commission's review ensures consistency and creates legal certainty.⁴⁹⁴ Viewed like that, Art. 4(5) EUMR prevents multiple merger filings and fosters the one-stop-shop principle,⁴⁹⁵ thereby reducing the effort and cost for the merging parties.⁴⁹⁶

1.2. Application to Killer Acquisitions

In the context of killer acquisitions, referrals pursuant to Art. 4(5) EUMR have proven a useful tool to spot potentially harmful start-up acquisitions. For instance, the transaction between Facebook and WhatsApp,⁴⁹⁷ as well as Apple's acquisition of Shazam,⁴⁹⁸ were both notified to the European Commission

⁴⁹⁰ Pape in Bunte, Art. 4 EUMR, para. 57; Boyce and Lyle-Smythe, para. 8.094.

⁴⁹¹ *ibid.*, para. 59; see also [Part III: Chapter 1: A. 2.](#)

⁴⁹² *ibid.*, para. 60. For more information on the conditions regarding Art. 4(5) EUMR, see also Schroeder/Sanner in Säcker/Bien/Meier-Beck/Montag, Art. 4 EUMR, paras. 147-177.

⁴⁹³ EC, Case Referral Notice, para. 69.

⁴⁹⁴ EUMR, Recital 12.

⁴⁹⁵ Boyce and Lyle-Smythe, para. 8.094. For more information, see also Heinen, 8 et seq.

⁴⁹⁶ EUMR, Recital 12; Pape in Bunte, Art. 4 EUMR, para. 65.

⁴⁹⁷ Case COMP/M.7217– Facebook/WhatsApp.

⁴⁹⁸ Case COMP/M.8788 – Apple/Shazam.

in that way. In fact, if it had not been for Art. 4(5) EUMR, these transactions would have escaped scrutiny from the European Commission since they both did not meet the turnover thresholds provided in Art. 1 EUMR. It is likely that, among other things, these cases inspired the Commission to facilitate referrals according to Art. 22 EUMR,⁴⁹⁹ the practice of which was amended in 2021 to facilitate referrals of Member States to the European Commission. Whilst Art. 22 EUMR does not replace Art. 4(5) EUMR—since this article covers pre-notification referrals at the initiative of the merging parties and not post-notification referrals by national authorities—it is likely that in the context of killer acquisitions, increasingly more importance is attributed to Art. 22 EUMR. The reason for this shift in focus will be explained in more detail below.

2. Introducing the New Practice of Art. 22 EUMR

On 26 March 2021, the European Commission published its new *Guidance on the application of the referral mechanism set out in Article 22 of the Merger Regulation to certain categories of cases*,⁵⁰⁰ with which it introduced a major changes of Art. 22 EUMR—presumably the most ambitious and significant since the adoption of the current EUMR in 2004.⁵⁰¹ According to the new practice of Art. 22 EUMR, Member States are allowed to refer acquisitions to the Commission for review even if the referring agencies have no power to assess the transactions under their national merger control rules.⁵⁰² The new policy significantly expands the current EU jurisdiction by empowering the Commission to investigate virtually any transaction that is subject to a referral request by at least one Member State. Thereby, such a referral by one or more Member States will not strip the other Member States of their jurisdiction but rather lead to the same acquisition being reviewed by the European Commission and the Member State authorities simultaneously.⁵⁰³ The legality of this new prac-

⁴⁹⁹ Friso Bostoen, 'The Commission's Article 22 EUMR Guidance: catching killer acquisitions through the merger referral procedure?' (*lexxion*, 19 April 2021) <<https://www.lexxion.eu/coreblogpost/article-22-referral-guidance/>> accessed 27 December 2023.

⁵⁰⁰ EC, Guidance on Art. 22 EUMR.

⁵⁰¹ Modrall Jay, 'EU Commission Launches Major Merger Control Reform' (*Kluwer Competition Law Blog*, 1 April 2021) <<http://competitionlawblog.kluwercompetitionlaw.com/2021/04/01/eu-commission-launches-major-merger-control-reform/>> accessed 27 December 2023.

⁵⁰² EC, Guidance on Art. 22 EUMR, para. 6.

⁵⁰³ Modrall Jay, 'EU Commission Launches Major Merger Control Reform' (*Kluwer Competition Law Blog*, 1 April 2021) <<http://competitionlawblog.kluwercompetitionlaw.com/2021/04/01/eu-commission-launches-major-merger-control-reform/>> accessed 27 December 2023.

tice was recently confirmed by the General Court in the *Illumina/Grail* case,⁵⁰⁴ which will be discussed in more detail below.⁵⁰⁵ First, however, some historical information will be given, which is necessary to fully understand where Art. 22 EUMR is coming from.

2.1. Brief History

Originally, Art. 22 EUMR was introduced in the old EUMR adopted in 1989 to allow the Member States that did not have a national merger control regime to report certain cases to the European Commission. This was the case for the Netherlands at the time, which explains why Art. 22 EUMR is also known as the Dutch clause.⁵⁰⁶ However, when most Member States, including the Netherlands, started adopting national merger control laws, the clause was mainly redundant in its purpose. Even though the Commission greatly elaborated on Art. 22 EUMR in the reforms in 2004, the application of this referral mechanism was only used reluctantly by the Member States for a long time. This may root in the fact that the Commission considered acquisitions with no relevance on a national level improbable to affect the internal market significantly.⁵⁰⁷ At least, this would explain why as of July 2021, there have only been 43 cases reported to the Commission through that mechanism,⁵⁰⁸ which, compared to the 10,000 plus notifications that the European Commission has received in total during the same time, seems to be a very small number.⁵⁰⁹ However, with the introduction of the drastic changes, which are the result of the evaluation the Commission drew from its Consultation of the EUMR launched in 2016,⁵¹⁰ the Commission's discouraging practice has taken a 180-degree turn.⁵¹¹

⁵⁰⁴ Case T-227/21 *Illumina v Commission*.

⁵⁰⁵ [Part III: Chapter 1: B. 2.5.](#)

⁵⁰⁶ Pape in Bunte, Art. 22 EUMR, para. 1.

⁵⁰⁷ *ibid*; see also [Part III: Chapter 1: A. 3.2.](#)

⁵⁰⁸ Pape in Bunte, Art. 22 EUMR, para. 11.

⁵⁰⁹ Bushell Gavin, 'How Illumina-ting: the EU Merger Regulation and the brutal operation of power under Article 22 EUMR' (*Kluwer Competition Law Blog*, 20 April 2021) <http://competitionlawblog.kluwercompetitionlaw.com/2021/04/20/how-illumina-ting-the-eu-merger-regulation-and-the-brutal-operation-of-power-under-article-22-eumr/#_ft_nref7> accessed 27 December 2023.

⁵¹⁰ For more information, see EC, 'Contributions and preliminary trends of the public consultation on Standards in the Digital Single Market: setting priorities and ensuring delivery' (EC, 5 February 2016) <<https://digital-strategy.ec.europa.eu/en/library/contributions-and-preliminary-trends-public-consultation-standards-digital-single-market-setting>> accessed 27 December 2023.

⁵¹¹ Vestager even stated herself that "[t]he Commission has had a practice of discouraging national authorities from referring cases to us which they didn't have the power to review

2.2. Conditions

According to the Guidance on Art. 22 EUMR, the Member States can now report any transaction according to Art. 3 EUMR that does not meet the turnover thresholds foreseen in the EUMR but nevertheless indicates serious competition issues. It presupposes that the concentration in question (i) affects trade between the Member States and (ii) threatens to significantly affect competition within the territory of the Member State(s) making the request, even if it is not a purely national acquisition.⁵¹² Whilst the first condition represents an essential component of European competition law to protect the Community interests and therefore constitutes a demarcation line to national laws also stipulated in Art. 101 and Art. 102 TFEU, the second condition requires the Member State(s) to show that “there is a real risk that the transaction may have a significant adverse impact on competition, and thus it deserves close scrutiny”.⁵¹³ To this end, it is sufficient that it relies on *prima facie* evidence of possible significant adverse effects on competition in its preliminary analysis without prejudging the outcome of a full investigation.⁵¹⁴ Accordingly, the wording “significantly affecting competition” chosen in Art. 22 EUMR generally exhibits lower thresholds than those foreseen for the substantive analysis in Art. 2(2) and Art. 2(3) EUMR, which require a ‘significant impediment’.⁵¹⁵ This reflects again the overarching aim of the Commission’s new practice to encourage more referrals of potentially harmful transactions under Art. 22 EUMR.

2.3. Categories of Relevant Transactions

To avoid too many notifications of irrelevant cases, the European Commission additionally provides guidance on the categories of transactions that are welcome under Art. 22 EUMR. Accordingly, Member States should primarily refer cases that include a company that:⁵¹⁶

themselves”, see Vestager Margrethe, ‘The future of EU merger control’, see Vestager Margrethe, ‘The International Bar Association 24th Annual Competition Conference’ (International Bar Association, 11 September 2020).

⁵¹² EC, Guidance on Art. 22 EUMR, para. 13.

⁵¹³ *ibid.*, para. 15.

⁵¹⁴ *ibid.*

⁵¹⁵ Pape in Bunte, Art. 22 EUMR, para. 24.

⁵¹⁶ EC, Guidance on Art. 22 EUMR, para. 19.

- i. has significant competitive potential yet to be developed or provides for a business model that generates high revenues (or is still in the initial phase of implementing such a business model);
- ii. is an important innovator or is conducting potentially important research;
- iii. is deemed to be an actual or potential important competitive force;
- iv. has access to competitively significant assets (for example, raw materials, infrastructure, data or intellectual property rights); and/or
- v. provides products or services that are key inputs or components for other industries.

In addition, the European Commission may also compare the offered purchase price for the target company to its current turnover.⁵¹⁷

2.4. Procedure

Where these conditions are met, and the transaction in question is deemed relevant, the Member States can, at their discretion, notify the Commission within 15 days or join an existing referral case within another 15 days.⁵¹⁸ There are no formal requirements for the referral request to be applied by the Member States.⁵¹⁹ Typically, one Member State would submit a request, and the other Member State(s) would join the initial request.⁵²⁰ The Guidance specifies that it does not matter whether a transaction has already been closed.⁵²¹

If the Commission considers the conditions of Art. 22(1) EUMR not met, it must reject the application. By contrast, if the conditions are met and the Commission considers itself to be better suited to assess the transaction, it lies at its

⁵¹⁷ *ibid.*

⁵¹⁸ Art. 22(1) and Art. 22(2) EUMR.

⁵¹⁹ This is an important difference to Art. 4(5) EUMR, where the parties need to fill in a so-called 'Form RS', thereby demonstrating that the concentration in question meets the legal criteria. For more information in this regard, see, for instance, Körber in Immenga/Mestmäcker, Art. 4 EUMR, para. 100.

⁵²⁰ Pape in Bunte, Art. 22 EUMR, para. 13.

⁵²¹ EC, Guidance on Art. 22 EUMR, para. 21.

discretion to decide whether it will look into the referred case.⁵²² With only four such refusals, history indicates that its thresholds to accept looking into a case are relatively low.⁵²³

2.5. Policy Changes Confirmed by the General Court

It was long unclear whether the policy changes introduced by the European Commission were legal. *Illumina/Grail* was the first case in which the Commission applied its new practice regarding Art. 22 EUMR.⁵²⁴ After banning the transaction, the parties appealed to the General Court, which, on 13 July 2022, eventually confirmed the new policy to be compatible with the EUMR. The details of this case will be discussed in-depth in the following subsections.

a) *Legality of the New Practice*

Given that the recently introduced Guidance considerably widens the scope of Art. 22 EUMR by enabling Member States to bring to the Commission cases that have EU-wide effects but do not fall within the scope of the EUMR, it has been argued that the Guidance on Art. 22 EUMR serves as a soft law that changes the spirit of the EUMR. In turn, this raised the major question of whether the new practice and the decisions taken in accordance with them are legal.⁵²⁵

In the *Illumina/Grail* case, the General Court established that the changed practice of the European Commission is admissible in essential points and confirmed that a request for a referral does not require the referring authority to have jurisdiction under national law.⁵²⁶ Although acknowledging that the re-

⁵²² *ibid.*, para. 3; Pape in Bunte, Art. 22 EUMR, para. 34.

⁵²³ The refusals were made in the following EC cases: Case COMP/M.3986 – *Gas Natural/Endesa*; Case COMP/M.4124 – *Coca Cola Hellenic Bottling Company/Lanitis Bros*; Case COMP/M.5828 – *Procter & Gamble/Sara Lee Hair Care*; Case COMP/M.6502 – *London Stock Exchange Group/LCH Clearnet Group*.

⁵²⁴ Case T-227/21 *Illumina v Commission*. Two more recent cases that were notified to the Commission through Art. 22 EUMR and where the conditions of Art. 22 EUMR were considered to be met are the acquisition of Autotalks by Qualcomm and EEX's planned purchase of Nasdaq's European power trading and clearing business, see EC, 'Daily News 18 / 08 / 2023' (EC Press Release, 18 August 2023) <https://ec.europa.eu/commission/presscorner/detail/en/mex_23_4201> and EC, 'Daily News 21 / 08 / 2023' (EC Press Release, 21 August 2023) <https://ec.europa.eu/commission/presscorner/detail/en/mex_23_4221> both accessed on 27 December 2023.

⁵²⁵ Legal Opinion concerning Art. 114 TFEU, 27.

⁵²⁶ For the whole argumentation see Case T-227/21 *Illumina v Commission*, paras. 85 et seq.

referral was originally intended for cases in which no merger control was regulated under national law, the General Court found that this does not preclude its application to cases in which national merger control law exists.⁵²⁷ After all, the purpose of the EUMR is to allow effective control of all mergers with a significant impact on competition in the Common Market.⁵²⁸ The referral mechanism is, therefore, to be viewed as a corrective measure that is part of the purpose of the EUMR and provides a flexible tool necessary to achieve the objectives of the Regulation.⁵²⁹

The General Court further established that since the Commission can assess a concentration according to Art. 22 EUMR only if a referral is requested from a Member State in the first place, the interests of the Member States are generally ensured, and the principle of subsidiarity is respected.⁵³⁰ This was further underpinned by the argument that Art. 22 EUMR can only be applied by the Commission if the conditions of this provision are fulfilled, which the General Court considered sufficiently clear and precise to restrict the Commission's discretion.⁵³¹ Thus, it concluded that Art. 22 EUMR is appropriate for achieving the objective of ensuring that mergers do not significantly impede effective competition in the Common Market.⁵³²

b) Procedural Questions

Given that the 15-day deadline is not determined pursuant to EU law but according to national rules, Art. 22 EUMR also poses procedural questions, probably the most pressing of which is what kind of information a Member State needs in order to trigger the deadline.⁵³³

More clarity in this regard has been given by the General Court in the *Illumina/Grail* case.⁵³⁴ The transaction was concluded on 20 September 2020, whereupon the European Commission received a complaint on 7 December 2020, finding that the transaction could be the subject of a referral under Art. 22 EUMR. After several exchanges with the complainant, the Commission

⁵²⁷ *ibid.*, paras. 96 et seq.

⁵²⁸ *ibid.*, para. 140.

⁵²⁹ *ibid.*, paras. 141–143.

⁵³⁰ Case T-227/21 *Illumina v Commission*, para. 144.

⁵³¹ *ibid.*, paras. 176–177.

⁵³² *ibid.*, para. 171. Note, however, that the Parties appealed the GC's decision and that the case is now pending before the European Court of Justice, see Case C-611/22 P *Illumina v Commission* and Case C-625/22 P, *Grail v. Commission*.

⁵³³ Von Schreitter and Urban, 641.

⁵³⁴ Case T-227/21 *Illumina v Commission*.

informed the Member States of the transaction on 19 February 2021 and explained why the concentration seemed to satisfy the conditions for a referral. On this basis, the Commission invited the Member States to submit a referral request, which the French competition authority followed on 9 March 2021. Later that month, the Belgian, Dutch, Greek, Norway and Iceland competition authorities also joined the French request, whereupon the Commission accepted the referral on 19 April 2021. The Commission found that the 15-days-deadlines had been met, thereby arguing that the transaction had been “made known” to the French competition authority on 19 February 2021 by means of the Commission’s letter, which contained all the information necessary for the authority to make a preliminary assessment for a referral. It further established that the joining countries’ requests also lay within the 15-day deadlines provided by Art. 22 EUMR.⁵³⁵

Thereupon, Illumina appealed the decision. Among other things, it argued that the referral request was not made in time and was contrary to the principles of legal certainty and ‘good administration’. It claimed that the Commission’s view of when the 15-days-deadline ought to start implies that a concentration needs to be notified *de facto* in all Member States, irrespective of whether national law requires such notification.⁵³⁶

The General Court rejected Illumina’s arguments, finding that the concept of ‘made known to the Member State concerned’—as stated in the second subparagraph of Article 22(1) EUMR—must be understood as requiring the relevant information to be actively transmitted to that Member State. It must allow the Member States to assess, in a preliminary manner, whether the requirements for a referral request under that article have been met. By doing so, the General Court clarified that merging parties have to contact the national competition authorities proactively and cannot merely rely on press releases.⁵³⁷

With regard to the complaint’s claim that the Commission had breached its duty under the EUMR to act within a ‘reasonable period of time’, the General Court acknowledged that the 47 working days period between the complaint and the invitation letter did indeed breach that requirement and thus was sent within an unreasonable period of time. Given that the time delay had not violated Illumina’s rights of defence, the Court did, however, decide not to annul the Commission’s decision on this ground.⁵³⁸

⁵³⁵ *ibid*, paras. 11–21.

⁵³⁶ *ibid*, para. 186.

⁵³⁷ *ibid*, para. 211.

⁵³⁸ Case T-227/21 *Illumina v Commission*, paras. 239 et seq.

2.6. Application to Killer Acquisitions

Having established the legality of the new practice, the question arises as to how useful the new Guidance on Art. 22 EUMR is. In this regard, it should be highlighted at the outset that by expanding the Commission's discretion to assert jurisdiction, Art. 22 EUMR constitutes a step in the right direction to tackle ongoing challenges posed by killer acquisitions, thereby closing the enforcement gap created by the existing turnover thresholds. It, therefore, provides a safety net for transactions that may not have been scrutinised due to their low turnover and despite their potentially harmful nature.

Moreover, the categories of relevant transactions issued in the Guidance show the Commission's efforts to narrow the scope of notifications by channelling the type of cases it wishes to be informed of. Due to the comprehensive formulation of the categories, the list covers a large range of concerns, including aspects of killer acquisitions. This reflects especially in the first point, specifying that particular attention should be paid to companies with a significant competitive potential yet to be developed. In addition, the last category, according to which the Commission may compare the offered purchase price for the target company to its current turnover, seems highly valuable in the context of killer acquisitions as it allows the Commission to put a greater emphasis on price disparities, which can provide a strong indicator that the target company holds high future potential. After all, why else would the acquirer pay much more than the standalone value if it was not for the potential that the start-up bears? The fact that paying a premium may constitute a valuable indicator of the motives of the incumbent's purchase was also acknowledged in the merger between iZettle and PayPal, which the UK Competition and Markets Authority scrutinised in 2018. The competition authority found that the intention of PayPal—a large provider of mobile point-of-sale devices—to acquire iZettle—a financial technology start-up that was an up-and-coming provider of in-store payment service solutions—for twice as much as its standalone value, i.e., \$2.2 billion, constitutes a sufficient reason to open an investigation.⁵³⁹ Using price disparity as a criterion to open an investigation may also have contributed, for instance, to identify the future potential that Facebook rightly

⁵³⁹ Note that nine days before PayPal announced the acquisition, the target company publicly announced its intention to list its shares on Nasdaq Stockholm. See CMA, Final Report – PayPal/iZettle, 12 June 2019, para. 8. Hence, this may have motivated PayPal to offer such a high purchasing price.

saw in Instagram by paying \$1 billion. Accordingly, it is generally highly welcome that the Commission included this criterion in its catalogue of relevant transactions.

Overall, it can be concluded that the introduction of the new practice of Art. 22 EUMR constitutes an effective measure to circumvent the high turnover thresholds foreseen in Art 1 EUMR. In this regard, it should be specified that the question of whether alternative measures to Art. 22 EUMR, such as the introduction of a value-based or share-based threshold, could have constituted even better measures in the fight against killer acquisitions will be the subject of Part IV.⁵⁴⁰

2.7. Challenges Posed by Art. 22 EUMR

Although the changes in practice introduced through the Guidance on Art. 22 EUMR are an effective way to tackle challenges arising in the context of killer acquisitions, they also considerably increase the regulatory complexity and legal uncertainty for firms that intend to merge. After all, from now on, it is no longer sufficient to rely on the turnover thresholds; merging parties need to assess whether they could also be the subject of a referral according to Art. 22 EUMR. This comes with the challenge that, as described in Part II, merging parties have to conduct highly complex assessments of the possible effects on innovation and competition on a market level, the outcome of which may not always be clear-cut and can therefore be very costly and time-consuming.⁵⁴¹ To get more legal certainty and to make sure that their transaction is compliant and does not become subject to Art. 22 EUMR, they may, therefore, increasingly seek the help of national competition authorities.⁵⁴² As a result, the new practice presumably raises both the merging parties' and authorities' workload, thereby challenging the latter's usually already scarce resources. Hence, Part IV will discuss how legal certainty could generally be increased and the higher workload for both the merging parties and the authorities tackled.⁵⁴³

⁵⁴⁰ See [Part IV: Chapter 1: A. 1.](#)

⁵⁴¹ See more [Part II: Chapter 2: D. 3.](#)

⁵⁴² Von Schreitter and Urban, 642–643.

⁵⁴³ [Part IV: Chapter 1: B.](#)

C. Substantive Analysis

Once the European Commission finds a transaction to fall within its competence, the screening stage is initiated, whereby the responsible case team at the European Commission starts the examination of the proposed transaction in accordance with the EUMR.⁵⁴⁴ Depending on the findings, the Commission can either (i) approve the transaction unconditionally if the concentration is compatible with the Common Market, (ii) conditionally clear the transaction if it considers the notifying parties' remedies sufficiently effective in eliminating the competition concerns raised or (iii) open an in-depth investigation on the grounds that the concentration raises serious doubts about compatibility with the Common Market.⁵⁴⁵

If the European Commission concludes that a concentration raises serious doubts about its compatibility with the Common Market, a Phase II investigation is initiated, during which an exhaustive substantive analysis according to Art. 8 EUMR in conjunction with Art. 2 (2) and Art. 2(3) EUMR of the planned merger is conducted. This analysis serves the purpose of ascertaining whether the transaction is compatible with the Common Market.

The starting point of the competitive assessment is typically the determination of the relevant market by identifying the substitutability between products or services. Thereafter, the Commission usually assesses and compares the market structure before and after the merger, thus looking at the market position of the merging parties. Ultimately, the decisive factor is whether, according to the Significant Impediment to Effective Competition test (SIEC-test), the "concentration ... creates or strengthens a dominant position as a result of which effective competition would be significantly impeded in the Common Market or a substantial part of it shall be declared incompatible with the Common Market."⁵⁴⁶

The remit of this subchapter is to explain in more detail how the European Commission assesses competitive harm. To this end, it will first shed light on the definition of the relevant market, thereby also taking into account the recently published Market Definition Draft, which is the result of ongoing re-

⁵⁴⁴ Art. 6 EUMR.

⁵⁴⁵ Art. 6(1)(b) and Art. 6(1)(c) EUMR.

⁵⁴⁶ Art. 2(3) EUMR.

forms. Thereafter, it will embark on a full-fledged analysis of the SIEC test, assessing whether the traditional tools provided by the European Commission are apt to address killer acquisitions in digital markets.

1. Market Definition

Identifying the relevant market generally constitutes the first step of the competition analysis. The Notice on Market Definition⁵⁴⁷—which is currently being revised by the Commission and a new draft of which was published in November 2022⁵⁴⁸—explains how the European Commission needs to approach the market definition and, to this end, sets out the basic principles.

The market definition pursues the purpose of defining the boundaries of competition between companies whilst ascertaining possible competitive constraints between the notifying firms.⁵⁴⁹ In other words, it is a means to an end and serves to establish the framework within which competition policy is applied by the Commission.⁵⁵⁰ According to the European Court of Justice, defining the market is “a necessary precondition for any assessment of the effect of a concentration on competition.”⁵⁵¹ It is a precondition for the calculation of market shares, which serves the purpose of assessing market power.⁵⁵²

1.1. Assessment of the Relevant Market

Following the decision in *United Brands*, the current Notice highlights that the market definition necessarily consists of the assessment of the product market as well as the geographic market,⁵⁵³ which can both be ascertained by asking the question of whether the market is “sufficiently homogenous and distinct from [other markets]”.⁵⁵⁴

⁵⁴⁷ EC, Market Definition Notice.

⁵⁴⁸ [Part III: Chapter 1: C.1.3.](#)

⁵⁴⁹ EC Market Definition Notice, para 2.

⁵⁵⁰ Woolfe and Kerr Morrison, 260.

⁵⁵¹ Case T-399/16 *CK Telecoms UK Investments v Commission*, para. 144; Case T-405/08 *Spar Österreichische Warenhandels v Commission*, para. 116; ECJ, joined Cases C-68/94 and C-30/95 *French Republic and Others v Commission*, para. 143.

⁵⁵² EC, Market Definition Notice, para. 2.

⁵⁵³ *ibid*, para 10.

⁵⁵⁴ Case 27/76 *United Brands Company v Commission*, para 12.

a) Relevant Product Market

The relevant product market comprises “all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products’ characteristics, their prices and their intended use.”⁵⁵⁵ Accordingly, the main question is whether the product or service concerned is substitutable with other goods. Substitutability can be divided into demand and supply-side substitutability.⁵⁵⁶

Demand substitutability assesses whether the consumers would consider other existing products as potential substitutes.⁵⁵⁷ Supply substitutability, on the other hand, ascertains whether firms that are currently neither producing nor distributing the products in the defined market would enter the market and become a competitor.⁵⁵⁸ The main question is whether “suppliers can switch production to the relevant products and market them in the short term without incurring significant additional costs or risks in response to small and permanent changes in relative prices.”⁵⁵⁹

To assess substitutability, the European Commission can consider quantitative and qualitative elements,⁵⁶⁰ which are often used in a complementary way.⁵⁶¹ The quantitative aspects are usually measured by means of the hypothetical monopolist test, better known as the Small but Significant Non-Transitory Increase in Price (SSNIP). It provides a tool to determine whether different goods can be seen as substitutes on the demand or supply side by looking at how consumers or suppliers would react to a small (5-10%) but permanent increase in the price.⁵⁶² On the other hand, qualitative aspects are generally ascertained through the functions and characteristics of the products or services con-

⁵⁵⁵ *ibid*, para. 7; Market Definition Notice, para. 7.

⁵⁵⁶ EC, Market Definition Notice, para. 13. Note that the Notice also mentions potential competition as a third source of competitive constraint. However, the Commission states that it should not be considered when defining market. If required, potential competition should only be assessed at a later stage when the merging parties’ market positions have been established, see Market Definition Notice, para. 24.

⁵⁵⁷ For more information, see, for instance, Montag and von Bonin in Säcker/Bien/Meier-Beck/Montag, Art. 2 EUMR, para. 51; Körber in Immenga/Mestmäcker, Art. 2 EUMR, para. 22; Käseberg in Bunte, Art. 2 EUMR, paras. 48–56.

⁵⁵⁸ For more information, see Montag and von Bonin in Säcker/Bien/Meier-Beck/Montag, Art. 2 EUMR, paras. 53–56; Körber in Immenga/Mestmäcker, Art. 2 EUMR, para. 23; Käseberg in Bunte, Art. 2 EUMR, para. 57.

⁵⁵⁹ EC, Notice on Market Definition, para. 20.

⁵⁶⁰ See Carlton, 4.

⁵⁶¹ For more information, see Carlton, 3.

⁵⁶² Whish and Bailey, 27 *et seq*.

cerned, as well as their price and intended use. Thereby, products and services are assigned to the same market if they are regarded as substitutable in terms of their functions, characteristics, pricing and purpose.⁵⁶³

As will be explained below, the assessment of the product market can raise major challenges in the context of digital markets and, thus, also in killer acquisition cases occurring in such markets.⁵⁶⁴ With regard to the latter, it should be further specified that anticipating the relevant product market can generally be difficult in cases of start-up acquisitions since, at the moment of the transaction, the innovation is still very young, and its development is usually uncertain. Hence, as will also be elaborated on below, to predict whether a product or service will be substitutable from a demand or supply perspective may often be fraught with a lot of uncertainty as it may often be difficult to assume the final form of the innovation concerned.⁵⁶⁵

b) Relevant Geographic Market

The European Commission defines the relevant geographic market as “the area in which the undertakings concerned are involved in the supply and demand of products or services, in which the conditions of competition are sufficiently homogeneous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those area.”⁵⁶⁶ The Commission commonly also applies the SSNIP test to the assessment of the relevant geographical market. Thus, the question to be asked is whether customers would switch to suppliers located in other areas if the local suppliers raised the price of their goods or services by 5-10%. To this end, factors such as market shares and price configuration,⁵⁶⁷ transport costs,⁵⁶⁸ legal and financial barriers,⁵⁶⁹ as well as the level of market integration can be considered.⁵⁷⁰ Although the EUMR generally focuses only on transactions occurring in the European Economic Area (EEA), the geographic market can also en-

⁵⁶³ EC, Notice on Market Definition, para. 7. For more information, see also Schwalbe and Zimmer, 86–89.

⁵⁶⁴ [Part III: Chapter 1: C. 1.2.](#)

⁵⁶⁵ [Part III: Chapter 1: C. 1.4.](#), see also [Part III: Chapter 1: C. 1.5.b\).](#)

⁵⁶⁶ *ibid.*, para. 8; see also Art. 9(7) EUMR.

⁵⁶⁷ EC, Notice on Market Definition, para. 28.

⁵⁶⁸ *ibid.*, para. 31.

⁵⁶⁹ *ibid.*, para. 30.

⁵⁷⁰ *ibid.*, paras. 32 et seq.

compass global markets, as is often the case for digital products or services.⁵⁷¹ This is important in the context of killer acquisitions since the geographical reach of the up-and-coming innovation concerned may commonly be unclear at the moment of the transaction. Consequently, it may often make sense to assume a global market in such cases.

1.2. Application to Digital Markets

Given that the European Commission's Notice on Market Definition dates back to 1997 and was designed at a time when digital markets were just on the rise, it does not account for the various specific features of such markets—especially not for their two and multi-sidedness. This raises questions such as whether two and multisided markets should be considered as one or separate markets. Moreover, given that services are often offered for free in digital markets, the assessment of substitutability, which is traditionally defined over price, poses various difficulties. Hence, the following subsections aim to ascertain and specify the main challenges the current approach to defining markets poses to digital markets.

a) Defining One Market or Separate Markets

Although the current Market Definition Notice does not explicitly consider two and multi-sided markets, in the case law, it has been proven several times by the European Commission that the market definition can apply to such markets. A few well-known examples where the Commission assumed the presence of two-sided markets are the cases *Travelport/Worldspan*,⁵⁷² *Google/DoubleClick*,⁵⁷³ or *Google Search (Shopping)*.⁵⁷⁴ However, given that the current market definition has been drafted for conventional single markets, its application to two- or multi-sided markets is not always evident. Probably one of the most pressing questions is whether the relationship between the platform in question and the respective market sides should be viewed as separate markets or whether they can be considered a single market.⁵⁷⁵ To answer this question, several categorisations of different platform markets have been developed in the literature.

⁵⁷¹ Sousa Ferro, 208; See, for instance, also EC decisions Case COMP/C-3/37.792 – Microsoft, para. 427; Case COMP/M.3216 – Oracle/People Soft, paras. 173 et seq.

⁵⁷² Case COMP/M.4523 – Travelport/Worldspan.

⁵⁷³ Case COMP/M.4731 – Google/DoubleClick.

⁵⁷⁴ Case AT. 39740 – Google Search (Shopping).

⁵⁷⁵ Franck and Peitz, 21.

aa) *Transaction and Non-Transaction Platforms*

Some authors distinguish between transaction platforms and non-transaction platforms. Transaction platforms are present when the transaction in question is made on the platform or is at least observable by it.⁵⁷⁶ An example of a transaction platform is provided by Amazon: consumers buy directly on the platform, whilst sellers typically pay a referral fee for each item sold to Amazon. In contrast, on non-transaction platforms, the transaction is not carried out on the platform itself but takes place outside of it. The transaction is therefore not observable for the platform.⁵⁷⁷ A typical example of such platforms is provided by media platforms, as they do not know whether a transaction eventually goes through between the advertising industry and the user.⁵⁷⁸

Departing from this distinction, Filistrucchi et al. suggest defining only one market in cases of transaction platforms. According to them, in these cases, aftermarkets form a common market with the primary markets. This is because there needs to be a match between two different sides, as the product itself is the transaction.⁵⁷⁹ By contrast, they find that non-transaction platforms should be viewed as two different markets. This is because a product or service may compete with those of a two-sided platform on one side of the market but not necessarily with those of the other side of the market(s).⁵⁸⁰

bb) *Matching and Attention Platforms*

Other streams of literature make a distinction between matching and attention platforms.⁵⁸¹ Matching platforms refer to platforms that aim at the best possible matching or mediation between people of heterogeneous groups

⁵⁷⁶ Filistrucchi et al., 298; Heinemann (forthcoming), 9.

⁵⁷⁷ *ibid.*, 293–339; Luchetti, 185–207.

⁵⁷⁸ Heinemann (forthcoming), 9.

⁵⁷⁹ See, for instance, *Ohio et al. v American Express Co.*, 585 U.S. (2018), where the Court found that “the key feature of transaction platforms is that they cannot make a sale to one side of the platform without simultaneously making a sale to the other. For example, no credit-card transaction can occur unless both the merchant and the cardholder simultaneously agree to use the same credit-card network.” This case sparked, however, a heated debate over its scope and meaning. A comprehensive overview of the debate is offered by Ginsburg Douglas H. and Wong-Ervin Koren W., ‘AmEx: Beyond Transaction Platforms and Section 1’ (CPI Competition Policy International, 14 May 2020) <<https://www.competitionpolicyinternational.com/amex-beyond-transaction-platforms-and-section-1/>> accessed 28 June 2023.

⁵⁸⁰ Filistrucchi et al., 298.

⁵⁸¹ See, for instance, Goos, Van Cayseele and Willekens, 437–438; Bundeskartellamt Arbeitspapier, 22.

without a transaction being a prerequisite.⁵⁸² Digital dating platforms are a common example used in this regard. By contrast, attention platforms like Facebook or LinkedIn are used to describe platforms that convey the attention of one user group to another.⁵⁸³

The Bundeskartellamt suggests that whereas a single market should be defined in matching platforms, individual markets need to be considered for attention platforms. Similar to the reasoning of Filistrucchi et al., it finds that a key reason for the definition of a single market for matching platforms is that the product or service concerned cannot be divided in such cases but requires the presence of all user groups. Accordingly, in these cases, the platform acts only as an intermediary. In contrast, in the presence of attention platforms, the Bundeskartellamt argues that different markets should be considered. This is because the product or service in question could also be offered in the absence of other sides.⁵⁸⁴ It, therefore, sticks to its distinction between matching and attention platforms.⁵⁸⁵

cc) Which One to Choose?

It should be specified that the Bundeskartellamt rightfully considers the distinction between matching and attention platforms more accurate than the distinction between transaction and non-transaction platforms because, otherwise, certain platforms could be classified as non-transaction platforms, although only one market should be defined. It illustrates its reasoning through dating platforms: since no transaction in the economic sense takes place after a 'match' between two people, a dating platform would be classified as a non-transaction platform, although they fulfil the characteristics of a transaction platform.⁵⁸⁶

In contrast to the Bundeskartellamt, the European Commission has so far not commented on any of the above-mentioned theories in its case law. For instance, this becomes apparent when looking at the *Travelport/Worldspan*

⁵⁸² Bundeskartellamt Arbeitspapier, 22.

⁵⁸³ *ibid.*, 24.

⁵⁸⁴ *ibid.*, 33.

⁵⁸⁵ For instance, in the famous Facebook case, whereby the German competition authority analysed whether the social media company breached Art. § 19 Abs. 1 German Competition Act (GWB), the Bundeskartellamt found that Facebook qualified as an attention platform because it sells users' attention to advertisers. However, besides the nature of the platform, it also considers other factors like network effects, see Bundeskartellamt, Case B6-22/16 – *Facebook*.

⁵⁸⁶ *ibid.*, 22–23.

merger, where it found that only one relevant market needed to be defined without referring to the question of whether it classifies the transaction as a non-transaction or matching platform.⁵⁸⁷ Similarly, in *Google/DoubleClick*, the Commission concluded that online advertising should be viewed as one market.⁵⁸⁸ Again, it did, however, not refer to any of the above-mentioned theories. Its reservation regarding the theories developed in the literature is also reflected in the recently published Market Definition Draft, which, as will be explained below, only refers to them marginally and does generally not consider them decisive for the market definition.⁵⁸⁹ Whilst this can give rise to legal uncertainty, it should also be highlighted what eventually counts is that the markets are never considered individually but that their interdependence is always taken into account in the context of digital markets.⁵⁹⁰

b) *Challenges Posed by the Assessment of Substitution*

Another challenge posed by the current market definition to digital markets is the assessment of substitution.

aa) *SSNIP Test and Digital Markets*

Compared to more traditional markets, it may be extremely difficult to use the SSNIP test in multi-sided markets. After all, increasing prices on one side of the market without modifying it on the other side makes little sense, especially since there exists no clear guide to know how price changes on both sides ought to be balanced.⁵⁹¹ Moreover, given that in digital markets, users do often not pay prices in a traditional sense, the SSNIP test reaches its limits at the latest when the Commission needs to assess a zero-price market. After all, in mathematics, an increase of 5-10% of zero always stays zero.

bb) *Assessment of Substitution Based on Consumer Behaviour*

By heavily relying on the assessment of substitution, i.e., on the question of whether consumers consider products or services interchangeably, the current market definition uses consumer behaviour to establish the boundaries of the market. In digital markets, where, as highlighted in Part II, large technol-

⁵⁸⁷ Case COMP/M.4523 – *Travelport/Worldspan*, para. 10.

⁵⁸⁸ Case COMP/M.4731 – *Google/DoubleClick*, paras. 20 and 72.

⁵⁸⁹ [Part III: Chapter I: C. 1.3.c\).](#)

⁵⁹⁰ Körber in Immenga/Mestmäcker, Art. 2 EUMR, para. 65.

⁵⁹¹ EC Report, 45. Note that this thesis will, however, not delve into all the details of the difficulties associated with it, as it would exceed its scope.

ogy companies commonly act as architects of the digital world and thus have the power to design markets in a certain way, such an approach may distort the assessment.⁵⁹²

To make the point, one may consider the history of video games. In the early days of video games, they were not gender-specific but marketed as family entertainment. However, after the video game crash in 1983, the industry had to be re-marketed, thereby focusing on a specific group, as developers could no longer afford to market to a broad demographic. Eventually, this led to gaming going from electronic entertainment to toys, where the shelves are typically divided into girls and boys. By choosing to market video games toward boys, which does not least become apparent by the name ‘Game Boy’, gaming was therefore deemed to become a game for boys and men rather than for girls and women, respectively.⁵⁹³

To come back to digital markets, this example illustrates how relying on the status quo of the market in order to ascertain consumers’ market behaviour that itself has been steered by the company’s design choice seems to distort the analysis. This applies particularly to digital markets since, unlike traditional markets, they are not bound by any physical feasibility but can almost entirely be designed by choice.

1.3. Draft of the New Market Definition Notice

Recognising the need for amendments, the Commission launched an evaluation of the current Market Definition Notice in April 2020⁵⁹⁴ and published its result of the evaluation in a Staff Working Document in July 2021.⁵⁹⁵ Among other things, it concluded that although the market definition remains an important exercise to guarantee transparency in the competition analysis, the characteristics of digital markets require certain amendments.⁵⁹⁶ Based on these findings, the Commission eventually published its first draft of the re-

⁵⁹² [Part II: Chapter 2: D. 2.](#)

⁵⁹³ Powell Dougie, ‘Why Are Games Marketed toward Boys?’ (*Game Luster*, 14 November 2017) <<https://gameluster.com/why-are-games-marketed-toward-boys/>> accessed 27 December 2023. Thank you also Luca Graf for giving me the idea of using this example in the context of the market definition.

⁵⁹⁴ EC, ‘Evaluation of the Commission Notice on the definition of relevant market for the purposes of Community competition law’ <https://competition-policy.ec.europa.eu/public-consultations/2020-market-definition-notice_en> accessed 27 December 2023.

⁵⁹⁵ SWD, Market Definition Notice.

⁵⁹⁶ *ibid.*, 24 et seq.

vised Market Definition Notice in November 2022,⁵⁹⁷ which considers the latest market developments and updates the current Notice with the case law of the last decades. It, therefore, also includes a specific section dedicated to digital markets, which in light of the challenges highlighted above, is highly welcome. The following subsections will discuss the most important changes regarding killer acquisitions.

a) Recognising Non-Price Elements

A highly welcome change proposed in the Notice Draft is the recognition of metrics other than price, like the level of innovation and the product's quality, such as sustainability, durability, availability and the value and variety of uses offered by the product.⁵⁹⁸ Also, barriers to entry and switching costs can be considered.⁵⁹⁹ By putting greater emphasis on these metrics, the Commission acknowledges the need to move away from the traditional, neo-classical parameters like price or output in digital markets.

b) Limits of the SNIPP Test

By specifying that metrics other than price can be considered in the assessment of substitutability,⁶⁰⁰ the Commission also acknowledges the limits of the conceptual framework of the SSNIP test.⁶⁰¹ As an alternative to the SSNIP test, the Commission suggests the application of the SSNDQ test,⁶⁰² standing for the 'Small but Significant Non-Transitory Decrease in Quality' (SSNDQ) test.⁶⁰³ This test requires an assessment of whether consumers would switch providers in the event of a decline in the quality of the services provided.⁶⁰⁴ Put differently, it involves assessing whether a hypothetical monopolist could decline the quality of its products or services without significantly losing customers. The Commission does, however, not further specify how the test would need to be applied exactly.

⁵⁹⁷ EC, Draft of Market Definition Notice.

⁵⁹⁸ *ibid*, paras. 7, 12 and 29.

⁵⁹⁹ *ibid*, para. 28.

⁶⁰⁰ *ibid*, para. 98.

⁶⁰¹ [Part III: Chapter 1: C.1.2.b\)aa\).](#)

⁶⁰² EC, Draft of the Market Definition Notice, para. 98.

⁶⁰³ For more information on this test, see, for instance, OECD (2013).

⁶⁰⁴ Report on Competition Law 4.0, 28.

c) *Defining One Market or Separate Markets in Multi-Sided Markets*

With regard to multi-sided markets, the Commission acknowledges that, in line with the literature discussed above, markets can either be viewed as a whole or be defined separately for the products offered on each side of the platform.⁶⁰⁵ As already touched on earlier, although marginally referring to transaction and matching platforms,⁶⁰⁶ it considers the nature of platforms only a factor among others and does therefore not see it as a decisive factor on its own. Instead, it makes the definition dependent on the facts of the case.⁶⁰⁷

d) *Including Forward-Looking Elements*

The Commission further establishes that the market definition can consist of a forward-looking assessment. In such cases, the Commission may take into account expected transitions in the structure of a market. It specifies that structural market transitions need to be distinguished from considerations relating to market entry by potential competitors. This is because structural market transitions affect the general dynamics of demand and supply in a market and thus influence the general reactions to changes in relative supply conditions. In particular, they may affect the market definition when there is, for instance, a sufficient probability that new types of products are about to emerge on the market.⁶⁰⁸ In this context, it refers to the *Gencor* decision⁶⁰⁹ and finds that, for example, when assessing medicinal products, the relevant product market can include pipeline products that are currently undergoing clinical trials.⁶¹⁰ It notes, however, that when applying the forward-looking exercise, it only considers “expected short-term or medium-term structural market transitions”⁶¹¹ and that strong indications as to the projected structural changes need to be present to assume them to be sufficiently probable. Moreover, the evidence presented must be reliable and go beyond mere assumptions that the observed trends will continue or that certain undertakings would change their behaviour post-transaction.⁶¹²

⁶⁰⁵ *ibid.*, 95.

⁶⁰⁶ EC, Draft of the Market Definition Notice, para. 95.

⁶⁰⁷ *ibid.*

⁶⁰⁸ EC, Draft of the Market Definition Notice, para. 16.

⁶⁰⁹ Case T-102/96, *Gencor v Commission*.

⁶¹⁰ EC, Draft of the Market Definition Notice, fn. 29.

⁶¹¹ *ibid.*, para. 16.

⁶¹² *ibid.*

1.4. Appreciation of the Changes in Light of Application to Killer Acquisitions

At the outset, it should be highlighted that the changes proposed are generally welcome as they bring the Market Definition Notice to the 21st century. Nonetheless, it would be welcome if the Commission specified certain aspects.

For instance, whilst the greater emphasis on non-price elements is highly useful in the context of killer acquisitions in digital markets, as they allow the Commission to better take into account quality aspects crucial to such transactions, it is not clear from the Draft Notice how these factors are supposed to be considered in the analysis. Put differently, it is not further specified how quality aspects should be defined and what weight ought to be attributed to them—⁶¹³ two questions that are crucial.

Another point to mention is the lack of the Draft Notice to explain the exact application of the SSNDQ test. Instead, it merely refers to the *Google Android* case, thereby citing the General Court findings that “the SSNDQ test [...] did constitute relevant evidence for the purpose of defining the relevant market” while at the same time noting that “defining a precise quantitative standard of degradation of quality of the target product cannot be a prerequisite for the application of the SSNDQ test. [...] All that matters is that the quality degradation remains small, albeit significant and non-transitory.”⁶¹⁴ This cited statement, however, does not specify how the SSNDQ test is supposed to be applied exactly. The lack of guidance may reflect the challenges stressed by the OECD, referencing Hartman et al.⁶¹⁵ by finding that “[the] idea [of an SSNDQ test] is therefore probably more useful as a loose conceptual guide than as a precise tool.”⁶¹⁶ However, it remains to be seen whether the Commission manages to give more comprehensive and clearer guidance on the application of this test in the final version of the Draft Notice.

With regard to the forward-looking elements, it should be stressed that such are crucial in killer acquisition cases as, although the nascent company may already be active in a product market at the moment of the transaction, it is

⁶¹³ Eben Magali, ‘The Draft Revised Market Definition Notice: The European Commission Brings the Relevant Market Further into the 21st century’ (*Kluwer Competition Law Blog*, 26 January 2023) <<https://competitionlawblog.kluwercompetitionlaw.com/2023/01/26/the-draft-revised-market-definition-notice-the-european-commission-brings-the-relevant-market-further-into-the-21st-century/>> accessed 27 December 2023.

⁶¹⁴ Case T-604/18 *Google and Alphabet v Commission (Google Android)*, paras. 177 and 180.

⁶¹⁵ Hartman et al., 334.

⁶¹⁶ OECD (2013), 15.

not necessarily this market that forms the outer limits of competition. Instead, what primarily raises concerns in the context of killer acquisitions is how the company will evolve from there and whether it may become either a disrupter or a competitor of the acquirer. Accordingly, in such cases, the Commission would have to ascertain the start-up's future product market, as it is this market that matters for the substantial analysis. However, by limiting the analysis to "expected short-term or medium-term structural market transitions"⁶¹⁷ and by requiring strong indications as to the projected structural changes, the Draft Notice may not be able to ascertain the future product market of a nascent company. This is because, in digital markets, technological inventions are frequently further developed whilst the product or service gains traction in the market. This commonly affects the certainty of the expected structural changes, making the projected structural changes likely to be fraught with significant uncertainty.⁶¹⁸ Instagram provides an excellent example: it started as a 'simple' photo-sharing app in 2014 and has been transformed into a leading social media platform with one billion users by 2018.⁶¹⁹ Similarly, in 2009, Uber started as a luxury car hire service and then turned into a car-sharing service after the launch of Uber X, which is a low-cost option introduced in 2012.⁶²⁰ Thus, unlike in the pharmaceutical sector, where the purpose of the product to be developed is usually already defined at the clinical trial stages and cannot simply be changed once the clinical trials, the outcome of innovation projects in the digital economy is often far less set in stone and commonly changes and improves over time.⁶²¹ Accordingly, even if the Notice Draft includes forward-looking elements, given that the innovation process in digital markets is less well-structured, it may be almost impossible to identify the future relevant product market with a sufficient degree of certainty in killer acquisition cases.

⁶¹⁷ Note that it, however, does not further specify the time period this shall include.

⁶¹⁸ Holmström et al., 10.

⁶¹⁹ For more information to Instagram's development, see Emeric Brard, 'Looking Back On The History Of Instagram On Its 10th Birthday' (Women Love Tech, 9 October 2020) <<https://womenlovetech.com/looking-back-on-the-history-of-instagram-on-its-10th-birthday/>> accessed 27 December 2023.

⁶²⁰ Hawkins Andrew J., 'Uber is now offering a 'quiet mode' option for its luxury service' (The Verge, 14 May 2019) <<https://www.theverge.com/2019/5/14/18623714/uber-black-quiet-mode-luxury-high-end#:~:text=Uber was originally founded as,into becoming a house-hold name.>> accessed 27 December 2023.

⁶²¹ See also Limarzi and Phillips, 9.

In turn, these findings raise the question of whether viewing nascent companies' markets as 'innovation markets', where the focus lies on research and development capabilities as opposed to a clearly defined product market, may be more conclusive in the digital economy.

1.5. The Concept of 'Innovation Markets'

At the outset, it should be highlighted that the existence of so-called 'innovation markets' is controversial. This is particularly obvious in the context of licensing. For instance, the US Licensing Guidelines distinguish between product markets, technology markets and R&D markets. Thereby, they define R&D markets to consist "of the assets comprising research and development related to the identification of a commercializable product, or directed to particular new or improved goods or processes, and the close substitutes for that research and development."⁶²² However, the Guidelines do not explicitly mention the term 'innovation markets'.

In the EU, on the other hand, the Technology Transfer Guidelines focus on product markets⁶²³ and technology markets⁶²⁴ without commenting on the concept of innovation markets.⁶²⁵ Although acknowledging that licence agreements can also affect competition in innovation, the Guidelines specify that "the Commission will normally confine itself to examining the impact of the agreement on competition within existing product and technology markets."⁶²⁶ They, therefore, do not further elaborate on the concept of innovation.

To link these observations to the draft of the revised Market Definition Notice, it should be highlighted that the term "innovation markets" is also not mentioned there. Although the inclusion of forward-looking elements shows the

⁶²² US Licensing Guidelines, para. 3.2.

⁶²³ According to para. 21 of the Technology Transfer Guidelines, "The relevant product market comprises the contract products (incorporating the licensed technology) and products which are regarded by the buyers as interchangeable with or substitutable for the contract products, by reason of the products' characteristics, their prices and their intended use."

⁶²⁴ According to para. 22 of the Technology Transfer Guidelines, "The relevant technology markets consist of the licensed technology rights and its substitutes, that is to say, other technologies which are regarded by the licensees as interchangeable with or substitutable for the licensed technology rights, by reason of the technologies' characteristics, their royalties and their intended use."

⁶²⁵ See Technology Transfer Guidelines, paras. 26, 130 and 170. Note that the term 'innovation markets' is not used at all, it is only referred to 'innovation in competition'.

⁶²⁶ *ibid*, para. 26. A comprehensive discussion on the concept of innovation markets is also offered by Heinemann (2009), 650–652.

European Commission's efforts to increasingly consider future markets, by constraining the analysis to short-term and medium-term structural market transitions and requiring high standards of proof when it comes to the projected market changes,⁶²⁷ the conversation seems to still very much focus on the identification of product markets, which, as shown above, may not be conclusive for killer acquisition cases.⁶²⁸ It may, thus, be worth looking at the case law on innovation competition, where the definition of innovation markets has primarily been further developed in the context of the pharmaceutical and agrochemical sectors.

a) Case Law

In its early decisions regarding innovation competition, the Commission generally limited its analysis to cases where one or both notifying parties were developing products that overlapped with the other's current or pipeline products. It, therefore, focused on pipeline products that were already at an advanced stage of development and close to penetrating the market, thereby analysing whether the concentration in question would reduce potential competition in the affected markets.⁶²⁹ However, in recent years, the Commission's practice has extended, also including products that are at a very early stage of development.⁶³⁰ For instance, in *Novartis/GlaxoSmithKline Oncology Business*, the Commission raised for the first time concerns as to whether the concentration could have negative effects on innovation competition resulting from a concentration between two firms that were funding similar research projects.⁶³¹ It found that "a concentration may not only affect competition in ex-

⁶²⁷ See [Part III: Chapter 1: C. 1.3.d](#).

⁶²⁸ See [Part III: Chapter 1: C. 1.4](#).

⁶²⁹ See, for instance, decisions taken by the European Commission in Case IV/M.737 – *Ciba-Geigy/Sandoz*; Case IV/M.950 – *Hoffmann-La Roche/Boehringer Mannheim*, paras. 97–100; Case COMP/M.1846 – *Glaxo Wellcome/SmithKline Beecham*, paras. 150 and 175–216; Case COMP/M.2312 – *Abbott/BASF*, paras. 18–29; Case COMP/M.7559 – *Pfizer/Hospira*, paras. 57–61; Case COMP/M.7975 – *Mylan/Meda*, paras. 580–589; Case COMP/M.8523 – *BD/Bard*, paras. 109–125; Case COMP/M.8955 – *Takeda/Shire*, paras. 74–77, 84–85 and 94. Note that the potential competition between pipeline products and existing products is often referred to as 'pipeline-to-market' competition. In contrast, potential competition that merely occurs between pipeline products is commonly described as 'pipeline-to-pipeline' competition.

⁶³⁰ For instance, in para. 26 of the Technology Transfer Guidelines, the Commission states that, in exceptional cases, i.e., where the "agreement affects innovation aiming at creating new products and where it is possible at an early stage to identify research and development poles", it would not confine itself to the existing product and technology markets.

⁶³¹ Case COMP/M.7275 – *Novartis/GlaxoSmithKline Oncology Business*.

isting markets, but also competition in innovation and new product markets” if the merger involves two crucial innovators that are developing products or technologies “for a new intended use and will therefore not replace existing products but create a completely new demand.”⁶³² From this case onwards, the Commission has increasingly started addressing the early elimination of competitive threats by considering competitive relationships between companies that were still in the innovation process and, consequently, not yet facing product competition.

One particularly interesting case in this respect is *Dow/Dupont*.⁶³³ In this case, the European Commission attempted to define innovation markets by introducing so-called ‘innovation spaces’. According to the Commission, an innovation space includes a company’s lines of research, which comprises “the set of scientists, patents, assets, equipment and chemical class(es) which are dedicated to a given discovery target.”⁶³⁴ The assessment of innovation spaces provides the Commission with a framework where it can compare the merging parties’ research efforts with each other, thereby ascertaining the impact of the transaction on these research efforts. It, therefore, aims to assess overlaps in the R&D poles, which may compete against each other and allows the Commission to recognise the importance of merging companies even where it is neither reflected in their downstream market shares nor in their R&D expenditures. Whether an overlap can be identified depends on various factors, including “the nature, scope and size of any other R&D efforts, their access to financial and human resources, know-how/patents, or other specialised assets as well as their timing and their capability to exploit possible results.”⁶³⁵

b) *Application to Killer Acquisitions*

Given that the definition of innovation markets and innovation spaces, respectively, was developed in the context of pharmaceutical and agrochemical markets, which are characterised by clear research poles that make the detection of potential overlaps more likely even at an early stage of the innovation project, this approach may not necessarily be conclusive in digital markets where

⁶³² *ibid*, paras. 89–90. Note that the Commission established that such a transaction would adversely affect competition, irrespective of the fact that the early pipeline products concerned exhibited a rather low probability of being launched, as the merging parties would have the incentive to either delay or cancel further support to overlapping research projects.

⁶³³ Case COMP/M.7932 – *Dow/DuPont*.

⁶³⁴ *ibid*, para. 1958; see also EC, see also Case COMP/M.8084 – *Bayer/Monsanto*, para. 80.

⁶³⁵ Case COMP/M.7932 – *Dow/DuPont*, para. 348.

the innovation process is less well-structured. In fact, this was also acknowledged in the European Commission Report, where it was argued that, as the assessment and the definition of innovation spaces largely hinges on the identifiability of clear research poles prior to the launch of a product or service,⁶³⁶ the analysis of innovation spaces in digital markets only makes little sense.⁶³⁷ This is because there is no need to undergo extensive testing prior to the launch of the product or service in digital markets. Thus, as already mentioned above, unlike in the pharmaceutical or agrochemical sector, where the purpose of the product to be developed is usually defined at the outset and cannot simply be changed once the clinical trials and toxicity testing have started, the outcome of innovation projects in the digital economy commonly changes and improves over time.⁶³⁸ In this regard, Cr  mer, de Montjoye and Schweitzer rightfully conclude that in digital markets, innovation is generally closer to the product market itself, which makes the identification of innovation competition usually highly uncertain and the concept of innovation spaces not suitable.⁶³⁹ At the same time, given that the assessment of product markets seems highly challenging in killer acquisition cases,⁶⁴⁰ this leaves the Commission with a somewhat dissatisfying situation in such cases. In fact, it seems that, as pointed out by Esteva Mosso–former DG COMP’s Deputy Director-General of Mergers, “[i]n some cases, you can know in which product the companies are innovating and you can identify an overlap in the future. But there could be situations where we don’t know the outcome of the innovation process, but we nevertheless know the innovation process would be harmed as a result of the merger.”⁶⁴¹ This exactly describes situations of killer acquisitions; after all, how should the Commission define boundaries of competition if boundaries are yet to be created? Possible answers to this question will be further elaborated on in Part IV.⁶⁴²

⁶³⁶ Note that this is also reflected in the Commission wording ‘given discovery target’ in the Dow/Dupont case, implying that the outcome of the discovery is already defined at the outset.

⁶³⁷ EC Report, 120.

⁶³⁸ See also Limarzi and Phillips, 9.

⁶³⁹ EC Report, 120.

⁶⁴⁰ See the discussion above in [Part III: Chapter 1: C. 1.4.](#)

⁶⁴¹ Newman Matthew, ‘Dow-DuPont Merger Remedy Reflects EU’s Growing Focus on Innovation, Mosso Says’ (mLex, 28 March 2017) <https://content.mlex.com/#/content/877094/dow-dupont-merger-remedy-reflects-eu-s-growing-focus-on-innovation-mosso-says?referrer=search_linkclick> accessed 27 December 2023.

⁶⁴² See [Part IV: Chapter 1: C. 3.](#)

2. Introduction to the SIEC Test

Once the European Commission has defined the relevant market, it assesses whether the transaction concerned could significantly impede effective competition (SIEC). To this end, the Commission needs to ascertain whether the “concentration which would significantly impede effective competition, in the common market or a substantial part of it, in particular as a result of the creation or strengthening of a dominant position, shall be declared incompatible with the common market.”⁶⁴³ Given the complexity of this test, the following subsections will first introduce its individual elements in more detail, thereby laying the foundation for the subsequent more in-depth analysis.

2.1. Relationship between Art. 2(2) and 2(3) EUMR

Art. 2(2) EUMR states that mergers that do not meet the SIEC test must be approved, whereas Art. 2(3) EUMR stipulates that those transactions that meet the SIEC test are to be banned. At first glance, Art. 2(2) and Art. 2(3) EUMR seem somewhat redundant. However, the European Court of Justice clarified that no general presumption regarding the compatibility or incompatibility of a notified concentration with the Common Market could be derived from the EUMR.⁶⁴⁴ In this regard, the apparent redundancy of Art. 2(2) and Art. 2(3) EUMR may be understood as an expression of the basic principle of this neutral attitude of the EUMR towards concentrations and therefore underpins the principle of merger neutrality.⁶⁴⁵

2.2. Common Market or a Substantial Part of It

The European Commission can prohibit a concentration only if it significantly impedes effective competition in the Common Market or a substantial part of it. The Common Market, also often referred to as the internal market, is defined in more detail in Art. 355 TFEU and Art. 52 TEU and, broadly speaking, comprises the territory of all Member States.⁶⁴⁶ However, it is not specified what a substantial part of the Common Market refers to exactly. According to

⁶⁴³ Art. 2(3) EUMR.

⁶⁴⁴ Case C-413/06 P *Bertelsmann and Sony Corporation of America v Impala*, para. 49.

⁶⁴⁵ *Körber in Immenga/Mestmäcker*, Art. 2, para. 198; referring to Roth, 701; see also Kalintiri, 67.

⁶⁴⁶ *ibid*, Art. 2, para 202.

case law, it can range from a single Member State⁶⁴⁷ to a single port⁶⁴⁸. The requirements for finding a substantial part of the Common Market being affected are, therefore, very low.

2.3. Impediment to Effective Competition

The SIEC test addresses impediments to effective competition. In turn, this raises the question of whether merger control is intended to protect competition only in a certain form, namely to the extent that it is effective. This can, however, be denied. Instead, this specification should rather be understood in the sense that competition cannot be effective when a certain degree of market power is exceeded.⁶⁴⁹ Thereby, the necessary degree to impede the effectiveness of competition must be ascertained on a case-by-case basis and cannot be generalised.

2.4. Significance of the Impediment

Besides requiring the impediment of effective competition, the SIEC test presupposes that the impediment is significant. To fully understand this requirement, it is important to explain why it was implemented in the first place.

a) Brief History

The old and first EU merger control regulation adopted in 1989 was characterised by the dominance test, prohibiting mergers that “create or strengthen a dominant position as a result of which effective competition would be significantly impeded”.⁶⁵⁰ The problem with this test was that, by emphasising the creation or strengthening of dominance, it did not encompass transactions that did not lead to the creation or strengthening of dominance yet impeded

⁶⁴⁷ See, for instance, EC decision in Case COMP/M. 1453 – AXA/GRE.

⁶⁴⁸ See Case C-179/90 *Mercati convenzionali porto di Genova v Siderurgica Gabrielli*.

⁶⁴⁹ *Körber* in Immenga/Mestmäcker, Art. 2 EUMR, para 201.

⁶⁵⁰ Art. 2(3) of the ex-EUMR. Note that ‘dominance’ generally refers to “a situation where one or more undertakings wield economic power which would enable them to prevent effective competition from being maintained in the relevant market by giving them the opportunity to act to a considerable extent independently of their competitors, their customers and, ultimately, of consumers.” Case T-102/96, *Gencor v Commission*, paras. 8 and 200. Similarly, in Case C-85/76 *Hoffmann-La Roche & Co v Commission*, para. 38, the ECJ found that dominance “relates to a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, its customers and ultimately of the consumers.”

effective competition. In fact, this led to a ‘blind spot’ for transactions that gave rise to non-coordinated effects in oligopolistic markets, i.e., cases taking place on markets with a limited number of firms without, however, leading to collective dominance.⁶⁵¹ Eventually, this loophole was closed with the revision in 2004, which led to the introduction of the SIEC test. As a result, the question of whether a transaction leads to a significant impediment to effective competition was moved to the centre of the substantial analysis, and the dominance test was ‘downgraded’ to a standard example of competitive harm.⁶⁵²

An illustrative example in this regard is provided by the case *Tom Tom/Tele Atlas*, in which the Commission rejected the undertakings’ contention that it must show that at least one of the parties will eventually hold market power resulting in a dominant position.⁶⁵³ Although dominance undoubtedly remains a relevant consideration,⁶⁵⁴ this case shows that the SIEC test additionally allows the Commission to declare a transaction incompatible with the Common Market under Art. 2(3) EUMR, even in the absence of dominance.⁶⁵⁵ Considering that killer acquisitions involve nascent firms with only low or no market shares—an aspect that will be further deepened below⁶⁵⁶—the shift from the dominance test to the SIEC test seems highly welcome. Its effectiveness in the context of killer acquisitions, on the other hand, remains to be assessed in more detail in the following subsections.

b) Conditions

The requirements for finding a SIEC are generally high. This can be deduced from the fact that the Horizontal and Non-Horizontal Merger Guidelines state that the EUMR shall prevent any merger likely to deprive customers of benefits deriving from competition by allowing the merging parties to significantly increase the market power of companies.⁶⁵⁷ As stated in both Guidelines, “[b]y

⁶⁵¹ Recital 25 EUMR; *Körber in Immenga/Mestmäcker*, Art. 2 EUMR, para. 183 with further remarks.

⁶⁵² *Käseberg in Bunte*, Art. 2 EUMR, paras. 100 and 102; *Körber in Immenga/Mestmäcker*, Art. 2, para. 8.

⁶⁵³ Case COMP/M.4854 – *Tom Tom/TeleAtlas*, para. 196; see also Case COMP/M.7062 – *ChemChina/Syngenta*, para. 182.

⁶⁵⁴ Horizontal Merger Guidelines, para. 4. See also Recital 25 and 26 EUMR.

⁶⁵⁵ To the whole development of the SIEC test, see, for instance, *Körber in Immenga/Mestmäcker*, Art. 2, para. 1–10; *Käseberg in Bunte*, Art. 2 EUMR, paras. 1–8 and 99–100; *Boyce and Lyle-Smythe*, paras. 8.218–8.220.

⁶⁵⁶ [Part III: Chapter I: C. 5.1.a\).](#)

⁶⁵⁷ Horizontal Merger Guidelines, para. 8; See also Non-Horizontal Merger Guidelines, para. 10.

‘increased market power’ is meant the ability of one or more firms to profitably increase prices, reduce output, choice or quality of goods and services, diminish innovation, or otherwise influence parameters of competition.”⁶⁵⁸ The anti-competitive effects resulting from a merger can, in principle, only legitimise a ban if it would impair competition as significantly as the creation or strengthening of sole or collective dominance. Accordingly, it presupposes a significant expansion of the merging companies’ scope for action post-transaction.⁶⁵⁹ But before delving deeper into the substantial analysis,⁶⁶⁰ this thesis will first analyse the standards of proof.

3. Standards of Proof

The finding of a significant impediment to effective competition is generally associated with high standards of proof for the European Commission. The following section will elaborate upon these standards.

3.1. Requirements of Proof

If the European Commission wants to clear or prohibit a transaction, it is up to it to find sufficient evidence to prove that the transaction in question is compatible or incompatible, respectively, with the Common Market.⁶⁶¹ In other words, pursuant to Art. 2(2) and (3) EUMR, the Commission needs to demonstrate that a concentration is more likely than not to impede effective competition significantly. Thus, the legal burden of demonstrating that a concentration significantly impedes effective competition lies on the Commission.⁶⁶² As also highlighted above, there exists no presumption that a merger is compatible or incompatible with the internal market.⁶⁶³

When scrutinising an acquisition, the Commission has to underpin its analysis with ‘convincing evidence’, i.e., sufficiently solid, consistent and coherent evi-

⁶⁵⁸ *ibid.*

⁶⁵⁹ Körber in Immenga/Mestmäcker, Art. 2 EUMR, para. 203.

⁶⁶⁰ This thesis will return to the high thresholds required to find a significant impediment in [Part III: Chapter 1: C. 5](#).

⁶⁶¹ An in-depth analysis of the standards of proof are provided by Kalintiri.

⁶⁶² This was, for instance, confirmed by the GC in Case T-342/99 *Airtours v Commission*, para. 59 and by the ECJ in Case C-413/06 P *Bertelsmann and Sony Corporation of America v Impala*, para. 52.

⁶⁶³ [Part III: Chapter 1: C. 2.1](#). See also Case C-413/06 P *Bertelsmann and Sony Corporation of America v Impala*, para. 48.

dence.⁶⁶⁴ Compared to other disciplines of competition law, the presentation of convincing evidence is considered particularly important in merger control since “it does not entail an examination of past events—for which often many items of evidence are available [...] but rather a prediction of events which are more or less likely to occur in future.”⁶⁶⁵ As the “chains of cause and effect [may be] dimly discernible, uncertain, and difficult to establish”, the Commission must undertake a particularly close examination to establish anti-competitive effects on competition in merger control.⁶⁶⁶ It may therefore be particularly difficult for the Commission to meet the standard of proof in merger cases.

As specified by the General Court in *Cisco*, the Commission, however, does not need “to show beyond any reasonable doubt that a concentration does not give rise to any competition concerns.”⁶⁶⁷ The fact that the Commission only needs to demonstrate, on the basis of the balance of probabilities, that it is “more likely than not” for a concentration to significantly impede competition has also been confirmed by the European Court of Justice in the recently issued *CK Telecoms UK Investments v Commission* ruling,⁶⁶⁸ where it overruled the General Court’s finding that “strong probability” was required to establish competitive harm under the EUMR.⁶⁶⁹ However, as implied in the judgment itself, it is crucial to differentiate between the measurement of probability and the requirement that this probability is based on a “sufficiently cogent and consistent body of evidence”.⁶⁷⁰ After all, by acknowledging the more likely than not approach, the Court does not explain the conditions that must be fulfilled for a sufficiently cogent and consistent body of evidence to meet the

⁶⁶⁴ *ibid.*, para. 172. See also decisions taken by the GC in Case T-214/06 *Imperial Chemical Industries v Commission*, para. 53 and Case T-79/12 *Cisco Systems and Messagenet v Commission*, para. 62.

⁶⁶⁵ Case C-12/03 P *Commission v Tetra Laval*, para. 42.

⁶⁶⁶ *ibid.*, para. 44.

⁶⁶⁷ Case T-79/12 *Cisco Systems and Messagenet v Commission*, para. 47.

⁶⁶⁸ Case C-376/20 P *Commission v CK Telecoms UK Investments*, para. 188.

⁶⁶⁹ Case T-399/16 *CK Telecoms UK Investments v Commission*, para. 118. (“In the context of an analysis of a significant impediment to effective competition the existence of which is inferred from a body of evidence and indicia, and which is based on several theories of harm, the Commission is required to produce sufficient evidence to demonstrate with a strong probability the existence of significant impediments following the concentration. Thus, the standard of proof applicable in the present case is therefore stricter than that under which a significant impediment to effective competition is ‘more likely than not’, on the basis of a ‘balance of probabilities’, as the Commission maintains. By contrast, it is less strict than a standard of proof based on ‘being beyond all reasonable doubt’”)

⁶⁷⁰ See Case C-376/20 P *Commission v CK Telecoms UK Investments*, para. 87.

standard of proof.⁶⁷¹ Accordingly, even if it was established that the measurement of probability is more likely than not, the Commission still needs to underpin its analysis with convincing evidence.⁶⁷²

3.2. Implications for the Counterfactual

The standards of proof discussed above are also relevant in the context of the analysis of the counterfactual, which requires the Commission to compare the conditions of competition resulting from the notified concentration with the hypothetical scenario that would prevail in the absence of the transaction.⁶⁷³ If the Commission considers the counterfactual to significantly improve competition compared to the scenario where the acquisition is approved, it can block the transaction.

To build the counterfactual, the Commission can, for instance, look at whether a company is about to enter or exit the market or whether there is evidence showing that existing competitors have made plans to expand their businesses. To this end, the European Commission must take into account the competitive conditions existing at the time of the transaction in order to evaluate its effects.⁶⁷⁴ In some circumstances, the Commission can, however, also consider future changes to the market that can reasonably be predicted.⁶⁷⁵ This may, for instance, apply if companies are expected to enter or exit a market.⁶⁷⁶ Thereby, the time span considered depends on each case and the dynamism of the market. For instance, in the *Cisco Systems v Commission* ruling, the Court found that a three-year period is particularly long if, as was the case in that judgment, it concerns a sector that is characterised by short innovation cycles.⁶⁷⁷ The generally rather short time span considered is because the more distant the Commission looks into the future, the more uncertain it is and, consequently, the less likely it is to meet the standards of proof.

⁶⁷¹ Case C-376/20 P *Commission v CK Telecoms UK Investments*, para. 77, where the Court highlights that it does not change or amend its existing case law when elaborating on the “standard of proof”.

⁶⁷² Thomas, 450.

⁶⁷³ Boyce and Lyle-Smythe, 713; see also Horizontal Merger Guidelines, para. 9; Non-Horizontal Merger Guidelines, para. 20.

⁶⁷⁴ Non-Horizontal Merger Guidelines, para. 20.

⁶⁷⁵ See Case COMP/M.7062 – *ChemChina/Syngenta*, para. 15.

⁶⁷⁶ See, for instance, Case COMP/M.6360 – *Nynas/Shell/Harburg Refinery*, para. 310, where the Commission has made far-reaching considerations with regard to the target company.

⁶⁷⁷ Case T-79/12 *Cisco Systems and Messagenet v Commission*, para. 121.

3.3. Application to Killer Acquisitions

In the context of killer acquisitions, it may be very challenging for the European Commission to gather sufficiently ‘convincing evidence’ to meet the rather high standard of proof required by the European Courts. This is because, due to the young nature of companies involved in killer acquisitions, the Commission generally needs to consider the distant future, which typically comes with a lot of uncertainty.

Besides high uncertainty, a layer of complexity is added in such cases due to the prevailing large information asymmetry between incumbents and competition agencies. This is because large technology companies possess an abundance of data, making it often easier for them to recognise a potential threat to their ecosystems at an early stage—information that competition authorities commonly do not have. An illustrative example showing this information asymmetry is provided by the Facebook acquisition of WhatsApp. The 2018 UK parliamentary inquiry revealed that “Facebook used Onavo to conduct global surveys of the usage of mobile apps by customers, and apparently without their knowledge. They used this data to assess not just how many people had downloaded apps but how often they used them. This knowledge helped them to decide which companies to acquire, and which to treat as a threat.”⁶⁷⁸ Put differently, Onavo helped the social media giant spot important up-and-coming technologies, like WhatsApp, thereby giving the acquirer a considerable information advantage over the European Commission. Accordingly, this instance shows that large incumbents have not only an edge over traditional industries but also over competition authorities in general to recognise user trends and spot potentially lethal threats.⁶⁷⁹ Looking at the *Facebook/Instagram* case, this may also explain why Facebook was willing to pay an extremely high purchasing price to the start-up. In fact, the social media giant paid twice as much as what outside investors had valued the firm at, which represents less than 1% of what the photo-sharing app would be worth today if it had stayed independent.⁶⁸⁰ Therefore, it seems that Facebook recognised the high

⁶⁷⁸ Collins Damian, ‘Note by Damian Collins MP, Chair of the DCMS Committee: Summary of key issues from the Six4Three files’ (UK Parliament, 8 June 2018) <<https://www.parliament.uk/globalassets/documents/commons-committees/culture-media-and-sport/Note-by-Chair-and-selected-documents-ordered-from-Six4Three.pdf>> accessed 27 December 2023.

⁶⁷⁹ Ezrachi and Stucke (2022), 42–44.

⁶⁸⁰ Condliffe Jamie, ‘Instagram Now Looks Like a Bargain’ (*The New York Times*, 27 June 2018) <<https://www.nytimes.com/2018/06/27/business/dealbook/instagram-facebook.html>> 27 December 2023.

value of the photo-sharing app long before anyone else had done so, probably even Instagram founders themselves. Facebook is not alone in its ability to use technology in order to identify potential threats to its market position. For instance, Amazon also used “third-party sellers’ data to identify and replicate popular and profitable products from among the hundreds of millions of listings on its marketplace.”⁶⁸¹

These examples demonstrate that, due to incumbents’ vast databases, which in turn help them recognise not only potential user demands at a very early stage but also spot promising innovation projects for reasons that may not be apparent to the European Commission, they have a considerable information advantage.⁶⁸² This is problematic since, where information asymmetries prevail, an imbalance of power can arise. As stated by Stiglitz, “the person buying insurance knows more about his health [...]; the owner of a car knows more about the car than potential buyers; the owner of a firm knows more about the firm than a potential investor; the borrower knows more about his risk and risk taking than the lender.”⁶⁸³ So how should the Commission pass well-informed decisions if it is the one that is at a significant information disadvantage? This is generally a huge problem for the Commission since, as stated by Vestager herself, “[t]he effectiveness of our merger control system relies on the accuracy of the information provided by the companies involved. Accurate information is essential for the Commission to take competition decisions in full knowledge of the facts.”⁶⁸⁴ What is more, in cases where the Commission finds out in hindsight that the parties lied to it, it only has very limited options to reverse the merger since, as will be discussed below, it may be particularly difficult to effectively dissolve killer acquisitions ex-post in digital markets.⁶⁸⁵ Although the Commission may impose high fines on the parties, it is questionable if they are sufficient to deter large technology companies from engaging in such practices.

From the above, it can be deduced that finding sufficiently convincing evidence to substantiate a claim that a transaction is more likely than not to impede effective competition and assess the counterfactual, i.e., ascertain

⁶⁸¹ House Report, 230.

⁶⁸² Bourreau and de Streel (2020), 20; For more information on information asymmetries in general, see Akerloff.

⁶⁸³ Stiglitz (2002), 465.

⁶⁸⁴ EC, ‘Mergers: Commission fines Sigma-Aldrich €7.5 million for providing misleading information during Merck takeover investigation’ (EC Press Release, 3 May 2021) <https://ec.europa.eu/commission/presscorner/detail/en/ip_21_2181> accessed 27 December 2023.

⁶⁸⁵ For more information, see [Part IV: Chapter 1: A. 2.1.](#)

whether the innovation project in question would become more popular if the parties stayed independent, may often be impossible to ascertain with certainty in killer acquisition cases. An emblematic illustration of this dilemma is provided by Facebook's purchase of Instagram in 2012. At the time of the transaction, Instagram had no revenue, a handful of employees and less than 30 million users.⁶⁸⁶ Thus, ascertaining its future independent success seemed to be a highly speculative exercise at the time of the transaction. Over the past years, both platforms have grown. Whilst Facebook has gained almost three billion active users,⁶⁸⁷ Instagram has attracted almost one billion subscribers within six years.⁶⁸⁸ Looking at the facts without hindsight bias,⁶⁸⁹ the acquisition seems not to have harmed competition. Nevertheless, it could also be argued that in the absence of the transaction, Instagram could have been just as or even more successful by staying independent, or it may have developed into an even more innovative player. However, the problem is that one can only see what Facebook did with Instagram post-transaction, but it is impossible to know with certainty how it would have developed if it had stayed independent. It is also impossible to establish how Facebook would have evolved in the absence of this transaction, i.e., whether the independent presence of Instagram would have incentivised the social media platform to either improve its existing service or develop a new service that is more similar to Instagram. Hence, if, even in retrospect, these assumptions are highly speculative, one can only imagine how difficult it can be for competition authorities like the European Commission to correctly assess and estimate the potential harm resulting from such a transaction at the time of the acquisition, especially without sufficient information of the merging parties. Consequently, to tackle harmful killer acquisition cases, the question is not whether uncertainty

⁶⁸⁶ Wagner Kurt, 'Here's why Facebook's \$1 billion Instagram acquisition was such a great deal' (Vox, 9 April 2017) <<https://www.vox.com/2017/4/9/15235940/facebook-instagram-acquisition-anniversary>> accessed 27 December 2023.

⁶⁸⁷ Statista Research Department, 'Number of monthly active Facebook users worldwide as of 4th quarter 2022' (Statista, 13 February 2023) <<https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/>> accessed 27 December 2023.

⁶⁸⁸ Carman Ashley, 'Instagram now has 1 billion users worldwide' (*The Verge*, 20 June 2018) <<https://www.theverge.com/2018/6/20/17484420/instagram-users-one-billion-count>>; Hartmans Avery, 'Instagram is celebrating its 10th birthday. A decade after launch, here's where its original 13 employees have ended up.' (*Business Insider*, 6 October 2020) <<https://www.businessinsider.com/instagram-first-13-employees-full-list-2020-4?r=US&IR=T>> both accessed 27 December 2023.

⁶⁸⁹ For more information on the hindsight bias in legal decision-making, see Teichman, 354–373.

should be allowed but rather how far in the future the Commission and the EU Courts are willing to look in the counterfactual analysis, i.e., how much uncertainty they want to accept to protect potential future competition. At least for the moment, they seem to consider a rather short time span in highly dynamic markets such as found in the digital economy, precisely because of the uncertainty that may arise from their analysis otherwise—a dilemma that will be further discussed in the policy debate.⁶⁹⁰

4. Framework for Determining Harm

When assessing whether a transaction constitutes a SIEC, the Commission generally first considers the type of transaction. Thereafter, it assesses the relevant theories of harm.

4.1. Types of Transactions

The EUMR distinguishes between horizontal and non-horizontal transactions.

a) Horizontal Transactions

Horizontal transactions involve undertakings operating in the same product and geographic market. They can encompass actual or potential competitors.⁶⁹¹ Horizontal transactions are generally viewed as highly harmful because, due to their nature, they lead to a reduction in rivalry.⁶⁹² In turn, this can lead to higher prices, lower quality, a smaller selection of goods and services and less innovation.⁶⁹³

b) Non-Horizontal Transactions

Non-horizontal transactions include undertakings that operate in different markets. They can further be subdivided into vertical and conglomerate mergers. The former describes transactions involving companies operating in different markets at different stages of the supply chain. By contrast, conglom-

⁶⁹⁰ See [Part IV: Chapter 1: C. 1.](#)

⁶⁹¹ Horizontal Merger Guidelines, para. 5.

⁶⁹² Note that to assess rivalry, the Commission focuses on the concept of substitutability of products and services, as explained in more detail in [Part III: Chapter 1: C. 1.1.](#)

⁶⁹³ Horizontal Merger Guidelines, para. 8, where the positive effects of the presence of competition are described. For more information on the effects of horizontal transactions see, for instance, Kokkoris and Valletti, 226–243.

erate mergers refer to transactions between companies that are either competitors, suppliers or customers. In other words, firms involved in a conglomerate transaction are neither horizontal competitors nor functionally related vertically. In practice, this form of merger usually occurs when the merging firms are active in closely related markets.⁶⁹⁴

Compared to horizontal mergers, non-horizontal transactions are generally viewed to be less likely to impede competition. In fact, they are often considered efficiency-enhancing, if not outright beneficial, unless they lead to foreclosure or other anti-competitive effects. The reason is that they neither lead to a market share addition nor do they directly blunt competition between rival companies operating in the same relevant market.⁶⁹⁵ On the contrary, integrating complementary activities may provide substantial scope for efficiencies as this typically decreases transaction costs and lowers inventory costs. Moreover, by allowing them to better coordinate the product and distribution process, the merging companies can better align their incentives about investments made in new products, production processes and the marketing of products. Eventually, non-horizontal transactions are commonly viewed to benefit customers as they enable the parties, for instance, to offer cheaper and/or improved products or services and facilitate consumers to profit from ‘one-stop shopping’.⁶⁹⁶

c) *Application to Killer Acquisitions*

Following the theory established above and combining it with the findings in Part II, according to which incumbents generally tend to acquire start-ups that operate in other relevant markets than themselves,⁶⁹⁷ killer acquisitions in digital markets would typically not be classified as (purely) horizontal transactions. This is not to say that they are never horizontal but rather to highlight that their ambiguous nature and the potential lack of sufficient evidence as to the parties’ potential future horizontal relationship at the moment of the transaction may pose daunting challenges to the classification. Thereby, the qualification of such transactions as non-horizontal can be problematic in so far as the underlying harm resulting from pre-empting potential future threats

⁶⁹⁴ Non-Horizontal Merger Guidelines, paras. 3–5.

⁶⁹⁵ *ibid*, paras. 11–12.

⁶⁹⁶ *ibid*, para. 14. For more information on the pro-competitive effects of non-horizontal transactions, see Schwalbe and Zimmer, 678 et seq. (vertical mergers) and 710 et seq. (conglomerate mergers).

⁶⁹⁷ [Part II: Chapter 2: B. 1.](#)

may be underestimated.⁶⁹⁸ This is because, unlike in more traditional markets, incumbents operating in digital markets generally have several core markets, which serve as focal points for expansion. Accordingly, the acquisition of a nascent firm can contribute to the strengthening of an incumbent's position and reduce valuable streams of uncertainty, even if it does not exhibit any horizontal overlap with the acquirer's core market at the moment of the transaction.⁶⁹⁹ The traditional understanding of the term competition, where uncertainty and consequently the incentive to innovate is largely considered to arise from rivalry,⁷⁰⁰ is therefore not necessarily applicable to digital markets where competition occurs for the market rather than in the market.⁷⁰¹ Put differently, in digital markets, rivalry is not necessarily the only source of uncertainty that may encourage companies to innovate in the relevant market. Among other things, this is also reflected in the fact that, as established in Part II, Arrow's replacing effects can go beyond the incumbent's core market.⁷⁰² The elimination of important agents of uncertainty whose development is unclear can thus be just as harmful as the reduction of (potential) rivalry as understood in the traditional sense, even if they do not exhibit any horizontal overlaps at the time of the transaction.⁷⁰³ Viewed like that, it seems that the underlying an-

⁶⁹⁸ Similar observations were made by Bryan and Hovenkamp (2020b), 248.

⁶⁹⁹ See also EC Report, 112 et seq. with the same conclusion. Note that the fact that non-horizontal transaction may raise horizontal concerns was also shown in the recent *Booking/eTraveli* case, in which the EC applied for the first time the horizontal framework to a non-horizontal transaction. This is because although the relationship was not considered to be horizontal at the moment of transaction, the lack of potential future competition resulting from the transaction was viewed to strengthen Booking's dominant position and to the increase of barriers of entry and expansion. For more information, see EC, 'Mergers: Commission prohibits proposed acquisition of eTraveli by Booking' (EC Press Release, 25 September 2023) <https://ec.europa.eu/commission/presscorner/detail/en/ip_23_4573> accessed 27 December 2023. See also McNelis Natalie, 'Booking-Etraveli merger blocked as remedies failed to ease competition fears, EU watchdog says' (MLex, 25 September 2023) <https://content.mlex.com/#/content/1502467/booking-etralivi-merger-blocked-as-remedies-failed-to-ease-competition-fears-eu-watchdog-says?referrer=search_linkclick> accessed 27 December 2023.

⁷⁰⁰ [Part I: Chapter 3: A.](#)

⁷⁰¹ [Part I: Chapter 2: A. 3.](#)

⁷⁰² [Part II: Chapter 2: D. 1.2.](#)

⁷⁰³ The strong reliance on rivalry in innovation cases is also illustrated in Case COMP/M.8084 – *Bayer/Monsanto*, para. 1059, where the Commission found that "rivalry is a crucial factor driving innovation because: (i) innovation is mostly based on product innovation, (ii) individual trait product markets are contestable on the basis of the innovation and (iii) the benefits of innovation competition targeting such a market can be appropriated by the innovator. Thus, a merger between competing innovators, by lowering the rivalry in the industry, likely results in a decrease in the incentives to engage in innovation competition."

alytical framework of the current EUMR, according to which horizontal and non-horizontal transactions exhibit different degrees of harm, does not necessarily hold true in the context of killer acquisitions and may eventually run the risk that the harm of start-up acquisitions with no current or potential future overlap is underestimated. Accordingly, trying to fit killer acquisitions into the current analytical framework seems to make only little sense. For the sake of completeness, it should be specified that these findings are not necessarily constrained to killer acquisitions occurring in digital markets, as similar difficulties could also arise in traditional markets where a target may plan to launch new business activities.

4.2. Distinction between the Main Theories of Harm

To assess whether a concentration is likely to lead to anti-competitive effects by creating or reinforcing the market position of the undertakings, the Commission generally applies one or more theories of harm. A theory of harm refers to a hypothesis of how and why a concentration could change the structure of the market and/or affect the incentives and conduct of the merging parties in a way that significantly impedes effective competition.⁷⁰⁴

The Horizontal and the Non-Horizontal Merger Guidelines generally distinguish between non-coordinated and coordinated effects.⁷⁰⁵ To better understand these theories of harm, the following subsections will briefly introduce their features.

a) *Non-Coordinated Effects*

Non-coordinated effects, also called unilateral effects,⁷⁰⁶ refer to instances where concentrations significantly harm competition through the behaviour of independent market actors. Accordingly, the main question that arises with respect to non-coordinated effects is whether the transaction leads to the reduction of competitive constraints,⁷⁰⁷ which can eventually lead to higher

Thereby, the Commission strongly relies on the findings of Kokkoris and Valletti, 228–229; Federico, Langus and Valletti, 136–140.

⁷⁰⁴ Boyce and Lyle-Smythe, 714.

⁷⁰⁵ Horizontal Merger Guidelines, paras. 24 et seq.; Non-Horizontal Merger Guidelines, paras. 29 et seq.

⁷⁰⁶ The terms ‘unilateral effects’ and ‘non-coordinated effects’ are interchangeable. Horizontal Merger Guidelines, para. 24, fn. 27.

⁷⁰⁷ See Horizontal Merger Guidelines, paras. 24–38; Non-Horizontal Merger Guidelines, paras. 29–77; Boyce and Lyle-Smythe, paras. 8.230 et seq.

prices, lower volumes and quality, as well as less innovation.⁷⁰⁸ How exactly non-coordinated effects are ascertained will be elaborated on below.⁷⁰⁹

b) Coordinated Effects

In contrast to non-coordinated effects, transactions causing coordinated effects primarily harm competition by leading to the interdependence of the actions of market players without them having to enter into an anti-competitive agreement according to Art. 101 TFEU.⁷¹⁰ Accordingly, transactions leading to coordinated effects allow companies to behave as if they had, for instance, agreed on prices or limiting supply on the market without having concluded an explicit agreement.⁷¹¹ Ultimately, coordinated effects allow companies to act as if they were a single dominant company.⁷¹² They can only occur where the market exhibits an oligopolistic structure, i.e., is characterised by a limited number of sizeable companies.⁷¹³

To find coordinated effects to result in a SIEC, the concentration needs to either create or reinforce tacit collusion.⁷¹⁴ This means that the transaction in question must change the market structure in a way that makes coordination more likely.⁷¹⁵ This is because if the market structure is already conducive to coordination prior to the transaction and is not affected by the transaction, there is no causality between the merger and the coordinated effects.⁷¹⁶ At the same time, this means that coordinated effects can also arise when the merger eliminates a maverick that previously made oligopolistic discipline dif-

⁷⁰⁸ Schwalbe und Zimmer, 284. A famous case in this respect is, for instance, *Tetra Pak I* where it was found that the acquisition of the only relevant competing technology would strengthen the acquirer's already strong market position and raise barriers to entry, see Case T-51/89, *Tetra Pak Rausing v Commission*.

⁷⁰⁹ [Part III: Chapter 1: C. 5.](#)

⁷¹⁰ See, for instance, Case IV/M.619 – *Gencor/Lonrho*, para. 140, where the Commission specified that “where a mere adaptation by members of the oligopoly to market conditions causes anti-competitive parallel behaviour whereby the oligopoly becomes dominant. Active collusion would therefore not be required for the members of the oligopoly to become dominant [...]”

⁷¹¹ For more information on tacit collusion, see, for instance, Ivaldi et al., 217–239; see also Boyce and Lyle-Smythe, para. 8.242.

⁷¹² Körber in Immenga/Mestmäcker, Art. 2 EUMR, para 453.

⁷¹³ Horizontal Merger Guidelines, fn. 29. Note, however, that with the rise of algorithms, concerns of tacit collusion may not only occur in oligopolistic markets but also in polypolistic markets, see Heinemann (2019b), 65.

⁷¹⁴ Boyce and Lyle-Smythe, para. 8.242.

⁷¹⁵ Levy and Cook, para. 14.11.

⁷¹⁶ Case COMP/M. 6104 – *Safran/SNPE Matériaux Energetiques/Regulus*, para. 100.

difficult or even impossible.⁷¹⁷ The mere possibility that collusion may arise after the transaction, however, is insufficient ground to prohibit a merger. Instead, the European Commission must demonstrate that a collusive outcome is likely post-transaction.⁷¹⁸

A look at the recent case law suffices to understand that the thresholds to find coordinated effects are generally high. In fact, ever since the *Airtours* case in 2002, there has not been any prohibition on this ground.⁷¹⁹ In this case, the General Court specified the conditions under which a transaction may lead to coordinated effects: (i) the companies in question must be able to monitor to a sufficient degree whether the terms of coordination are being adhered to, (ii) there must be a certain degree of credible deterrent mechanism that can be activated if a deviation of one participant is detected and (iii) there must be no outsiders, including current and future rivals, which could jeopardise the results expected from the coordination.⁷²⁰

c) *Application to Killer Acquisitions*

Given that in killer acquisition cases occurring in digital markets, the main concern is that such transactions allow incumbents to cement and strengthen their market position by removing potential future threats,⁷²¹ this thesis primarily focuses on non-coordinated effects. They will be analysed in more detail below.⁷²²

The occurrence of coordinated effects, on the other hand, seems less straightforward in such cases, especially where innovation is just foregone. This is because, at the moment of the transaction, killer acquisitions may often not change the market structure in a way that makes coordination more likely. Instead, their potential to do so usually lies in the future. Accordingly, although they may involve a nascent company that may become a maverick one day, the fact that the target will eventually become a maverick is typically fraught with uncertainty. Finding coordinated effects in killer acquisitions may therefore be highly challenging—not least because, as highlighted above, the thresholds

⁷¹⁷ Horizontal Merger Guidelines, para. 32; Case COMP/M.7758 – *Hutchison 3G/Italy/Wind/JV*, paras. 972 et seq.

⁷¹⁸ See Case COMP/M.2416 – *Tetra Laval/Sidel*.

⁷¹⁹ Körber in Immenga/Mestmäcker, Art. 2 EUMR, para. 470 with further remarks.

⁷²⁰ Case T-342/99 *Airtours v Commission*, paras. 60 et seq.; see also Case COMP/M.6214 – *Seagate/HDD Business of Samsung*, para. 547.

⁷²¹ For more information in this regard, see also [Part II: Chapter 2: C.](#)

⁷²² [Part III: Chapter 1: C. 5.](#)

to find collective dominance are generally high. This also becomes apparent when looking at the *Airtours* criteria. After all, killer acquisitions in digital markets would commonly neither affect the existing companies' ability in a way that allows them to better monitor the adherence to terms of coordination nor would they lead to the necessity to introduce deterrent mechanisms post-acquisition. Moreover, although the coordinating companies could create kill zones around them in order to deter new entrants,⁷²³ this could be done irrespective of the clearance of the transaction. Hence, the finding of coordinated effects amounting to a SIEC in killer acquisition cases in digital markets may hardly ever be considered under the current framework. For this reason, the following subchapter will exclusively focus on the assessment of non-coordinated effects.

5. Assessment of Non-Coordinated Effects

There exists no 'checklist' for the assessment of harm, as every case is different and, consequently, needs to be assessed individually.⁷²⁴ This was also confirmed by the General Court in *Sun Chemical Group and Others v Commission*, in which it established that the European Commission enjoys discretion in this respect, allowing it to consider particular factors for each case separately.⁷²⁵ Over the years, the European Commission has, however, developed certain criteria for horizontal and non-horizontal transactions, which ought to help find whether a transaction significantly impedes competition. The following subsections will analyse whether the Commission's existing competition toolbox to ascertain non-coordinated effects is apt to assess killer acquisitions.

5.1. Horizontal Transactions

Non-coordinated effects primarily arise if the transaction concerned (i) allows the acquirer to have an appreciably larger market share post-transaction than its rivals or (ii) eliminates important competitive constraints.⁷²⁶ Over the years,

⁷²³ For more information on kill zones, see also [Part I: Chapter 2: B. 3.](#)

⁷²⁴ *ibid.*, para. 13.

⁷²⁵ Case T-282/06 *Sun Chemical Group and Others v Commission*, para. 57.

⁷²⁶ Boyce and Lyle-Smythe, para 8.231.

the Commission has developed various theories of harm that allow it to effectively establish competitive harm.⁷²⁷ This subsection will analyse the relevant theories with respect to killer acquisitions.

a) *Traditional Assessment of the Market Position*

Typically, the European Commission starts its analysis with the assessment of the merging parties' market position, which provides the first indications of the market structure and the competitive importance of the merging parties as well as their competitors.⁷²⁸ Thereby, the reference to 'first indications' clarifies that the assessment of market shares and concentration levels is just a tool to conduct the first screening and, consequently, is not determinative in itself.⁷²⁹

The market position generally results from the relationship between the notifying parties and their rivals. It is primarily ascertained by means of market shares, which ought to reflect a firm's performance and success in competition.⁷³⁰ However, as will be discussed below, the Commission may also consider other metrics, such as network effects or data.⁷³¹ In the end, the main goal of this exercise is to assess whether the merging parties would have the "ability and incentive to make the expansion of smaller firms and potential competitors more difficult or otherwise restrict the ability of rival firms to compete."⁷³² As explained above, the finding of dominance is, however, not necessarily under the SIEC test.⁷³³

⁷²⁷ Note that in paras. 27 et seq. of the Horizontal Merger Guidelines, the Commission identifies various factors influencing whether a transaction is likely to eliminate important competitive constraints. Relevant questions include, for instance, whether merging parties are close competitors, whether customers can still switch to alternative suppliers, whether actual or potential competition is eliminated, whether the entry and expansion conditions are negatively affected post-transaction and whether important competitive forces are eliminated. Note, however, that this thesis limits itself to the most relevant questions regarding killer acquisitions.

⁷²⁸ Horizontal Merger Guidelines, para. 14.

⁷²⁹ An example in this regard is provided by Case COMP/M. 6471 – *Universal Music Group/EMI/Music*.

⁷³⁰ Kerber (1994), 58.

⁷³¹ [Part III: Chapter 1: C. 5.1.a\)dd](#).

⁷³² Horizontal Merger Guidelines, para. 36.

⁷³³ [Part III: Chapter 1: C. 2.4.a](#).

aa) Market Share

According to the ‘AKZO presumption’, which was established in the case *AKZO Chemie v Commission*, market shares of 50% or more may themselves be evidence of the existence of a dominant position.⁷³⁴ However, this is not a fixed rule.⁷³⁵ For instance, in *Rewe/Meinl*, the Commission found a dominant market position, although the merging parties’ market shares were below 40%.⁷³⁶ Establishing market dominance can therefore depend on other factors, including the number of competitors, the presence of capacity constraints or to what extent the products in question are substitutable.⁷³⁷ In general, for horizontal transactions, there is a presumption of compatibility with the internal market where the market share of the undertakings concerned does not exceed 25%.⁷³⁸ In such cases, the transaction is typically not viewed to significantly impede competition in the Common Market.⁷³⁹

In addition to the assessment of the absolute market shares, the European Commission may also assess the relative market share by considering the number and strength of the other competitors. It is impossible to define a specific market share that would always lead to the affirmation of market dominance. Instead, the overall view is decisive.⁷⁴⁰ If a company has, for instance, an absolute market share of 40%, yet its rivals only hold market shares of 5% each, it may indicate dominance. High market shares, in combination with a large gap to the competing companies in terms of market shares, may, therefore, also indicate market dominance.

bb) Concentration Level

Besides the market shares, the European Commission must also establish the market concentration level. To this end, it typically applies the so-called ‘Herfindahl-Hirschman Index’ (HHI). It is calculated by summing squares of the individual shares of all the companies in the market. The application of this test is not binding; the Guidelines merely suggest it. Nevertheless, it is commonly used and generally viewed as a helpful tool to measure the compet-

⁷³⁴ Case C-62/86 *AKZO Chemie v Commission*, paras. 5 and 59–60.

⁷³⁵ Horizontal Merger Guidelines, para. 17.

⁷³⁶ Case IV/M.1221 – *Rewe/Meinl*, paras. 98–114.

⁷³⁷ Horizontal Merger Guidelines, para. 17.

⁷³⁸ Recital 32 EUMR.

⁷³⁹ Case C-62/86 *AKZO Chemie v Commission*, para. 60.

⁷⁴⁰ *Körber in Immenga/Mestmäcker*, Art. 2 EUMR, para. 244.

itive pressure in the market post-merger. Moreover, the change in the HHI, which is referred to as the ‘delta’, indicates the change in concentration directly brought about by the merger in question.⁷⁴¹

In general, the European Commission sees no horizontal competition concerns in a market that exhibits a post-merger HHI below 1,000. Such markets, therefore, usually do not require extensive analysis by the Commission.⁷⁴² This also applies to mergers with a post-merger HHI between 1,000 and 2,000 and a delta below 250 or a merger with a post-merger HHI above 2,000 and a delta below 150.⁷⁴³ Exceptions may, however, be made where the merger involves a potential entrant or a recent entrant with a small market share or where one or more of the parties are important innovators.⁷⁴⁴

cc) *Application to Digital Markets*

At the outset, it should be stressed that ascertaining the market position through the assessment of market shares and concentration levels is generally considered less informative in digital markets than in traditional markets.⁷⁴⁵ On the one hand, this is owed to the fact that identifying these criteria strongly depends on the market definition, which, as described above, can be very difficult to ascertain in such markets in the first place.⁷⁴⁶ On the other hand, due to the dynamic nature of digital markets,⁷⁴⁷ market shares may change rapidly, thus not constituting a reliable proxy for the acquirer’s ability to capture the returns to innovation in digital markets. This was also acknowledged in the *Microsoft/Skype* merger in 2011, where the European Commission found that market shares were of little explanatory value given that the market was nascent and changes occurred rapidly.⁷⁴⁸ Similarly, in the *Facebook/WhatsApp* case, the Commission also found that due to “frequent market entry and short innovation cycles”, high market shares do not necessarily indi-

⁷⁴¹ Horizontal Merger Guidelines, para. 16.

⁷⁴² *ibid.*, para. 19.

⁷⁴³ *ibid.*, para. 20.

⁷⁴⁴ *ibid.*

⁷⁴⁵ Käseberg in Bunte, Art. 2 EUMR, para. 143; see also the Draft of the Market Definition Notice, para. 107, where the Commission finds that the following alternative metrics could be useful in digital markets: the number of (active) users, the number of visits, time spent or audience numbers, the number of downloads and updates, the number of interactions, volume or value of transactions concluded over a platform.

⁷⁴⁶ [Part III: Chapter 1: C. 1.2.](#)

⁷⁴⁷ For more information on the dynamism prevailing in digital markets, see [Part I: Chapter 2: A. 4.](#)

⁷⁴⁸ Case COMP/M.6281 – *Microsoft/Skype*, paras. 78–80.

cate market power.⁷⁴⁹ In other words, it concluded that given market shares' ephemeral character in digital markets, they "are not necessarily indicative of market power."⁷⁵⁰ Accordingly, the current approach of assessing the market position does not seem to provide a reliable proxy for the acquirer's ability to capture the returns to innovation and constitutes a poor indicator of market power in digital markets. Among other things, it is exactly for these reasons that instead of merely looking at market shares, the European Commission has increasingly started considering other metrics when assessing the merging companies' position in digital markets.

dd) Alternative Metrics to Ascertain the Market Position

When establishing merging parties' positions in digital markets, the European Commission has paid particular attention to network effects and access to data.

As highlighted in Part I, network effects can play an important role in conveying incumbents a competitive advantage.⁷⁵¹ Acknowledging this fact, the Commission has increasingly involved the consideration of such effects in its analysis in its more recent case law. However, in *Facebook/WhatsApp*, the Commission ascertained that "the existence of network effects as such does not a priori indicate a competition problem in the market affected by a merger."⁷⁵² It established a number of factors, including the fast-moving nature of the sector and the tendency of users to multi-home, that can mitigate the effects of the network effects as an impediment to entry or expansion by other rivals.⁷⁵³ In a similar vein, in the *Microsoft/Skype* case, the Commission found that the fact that most users could easily switch to services would mitigate prevailing network effects.⁷⁵⁴ In contrast, in *Microsoft/LinkedIn*, the Commission highlighted that multi-homing was only possible to a limited degree since building and maintaining the social network and keeping the profile up

⁷⁴⁹ Case COMP/M.7217– *Facebook/WhatsApp*, para. 99.

⁷⁵⁰ *ibid.* This was also confirmed by the General Court Case T-79/12 *Cisco Systems and Mesagenet v Commission*, para. 69, where it found that "in such a dynamic context, high market shares are not necessarily indicative power."

⁷⁵¹ [Part I: Chapter 2: A. 1.](#)

⁷⁵² Case COMP/M.7217– *Facebook/WhatsApp*, para. 130.

⁷⁵³ *ibid.*, paras. 127–140.

⁷⁵⁴ Case COMP/M.6281 – *Microsoft/Skype*, paras. 91–92.

to date takes a lot of time and dedication.⁷⁵⁵ Hence, in this case, it concluded that multi-homing was viewed as unlikely to mitigate any adverse effects of network effects on competition.

Besides network effects, the Commission has also increasingly started taking into account the extent to which data can confer a competitive advantage on the merging parties by enabling them to improve their products or services in ways that rivals are unable to match.⁷⁵⁶ Interestingly, in most of these cases, the Commission concluded that the transaction concerned would not result in a unique, non-replicable advantage as rivals would be able to obtain data in other ways. For instance, in the *Google/DoubleClick* case, the Commission considered whether the merging companies could obtain a competitive advantage by combining their datasets post-transaction, which would allow them to place better-targeted ads. It eventually established that the transaction was unlikely to convey DoubleClick an advantage given that rivals already had access to user web-surfing data and data could be acquired from third parties.⁷⁵⁷ Similarly, in *Facebook/WhatsApp*, the Commission assessed whether a potential data concentration could strengthen Facebook's market position in online advertising by enabling it to better target adverts to users that also use WhatsApp's services. However, it found that a sufficient number of alternative providers of online advertising services would remain post-transaction. Moreover, it also highlighted that there were many other market participants that collected user data, making it unlikely for Facebook to hold a large amount of valuable user data post-transaction exclusively.⁷⁵⁸ The Commission came to a similar conclusion in *Microsoft/LinkedIn*. In this case, however, it looked more specifically at whether the transaction and the resulting merger of the parties' user data could create horizontal effects by increasing the merging companies' power in a market for the supply of data. Eventually, it did not find any evidence pointing towards such a concern because (i) both Microsoft and LinkedIn did not make their data available to third parties pre-transaction, (ii) competitors still had access to large amounts of data outside the merging companies' exclusive control and (iii) there were other, smaller players in online advertising.⁷⁵⁹

⁷⁵⁵ Case COMP/M.8124 – *Microsoft/LinkedIn*, paras. 345–346.

⁷⁵⁶ For more information on the role of data in digital markets, see [Part I: Chapter 2: A. 5.](#)

⁷⁵⁷ Case COMP/M.4731 – *Google/DoubleClick*, paras. 364–365.

⁷⁵⁸ Case COMP/M.7217 – *Facebook/WhatsApp*, paras. 187–189.

⁷⁵⁹ Case COMP/M.8124 – *Microsoft/LinkedIn*, paras. 179–180.

The *Google/Fitbit* merger⁷⁶⁰ provides an exception to these rulings. In this case, the Commission established that the combination of the parties' datasets would allow Google to offer 'relatively better' products and strengthen its dominance in the market for online search advertising services.⁷⁶¹ This is because, in its assessment of the competitive relevance of Fitbit's dataset, the Commission ascertained that the target collects data about a significant number of users/days and that it has a large user base of monthly users in the EEA.⁷⁶² Hence, the Commission concluded that (i) Google's dominant position in online search advertising, (ii) its capabilities combined with Fitbit's data and (iii) its ability to collect data on a large scale would allow Google "to marginalise even further its limited competitors in online search advertising."⁷⁶³

ee) *Application to Killer Acquisitions*

In killer acquisition cases occurring in digital markets, the assessment of market shares and the concentration level may generally be neither informative nor conclusive; after all, start-ups' potential has typically yet to fully unfold and, consequently, they may exhibit no or only low market shares in the relevant market, making the calculation of the HHI a pointless exercise. By constituting small events with potentially wide implications, such cases would, therefore, likely be exempted from the traditional assessment of the parties' market position.

Alternatively, the Commission could look at other metrics when assessing such transactions. As shown above, two particularly useful metrics could be network effects and data. In the context of killer acquisitions, the assessment of network effects is crucial since they may indicate the growth potential of the nascent company. Multi-homing as mitigating factors, on the other hand, should not be given too much weight in such cases as the main question is whether the start-up concerned could grow into an independent, meaningful player, which is important irrespective of whether consumers can multi-home. Moreover, as stated in Part I, many consumers may eventually not multi-home between acquirer services and third-party services due to the convenience cost arising from switching.⁷⁶⁴

⁷⁶⁰ Case COMP/M.9660 – *Google/Fitbit*.

⁷⁶¹ *ibid*, paras. 402 and 427.

⁷⁶² *ibid*, para. 418.

⁷⁶³ *ibid*, paras. 444–445 and 454–455.

⁷⁶⁴ [Part I: Chapter 2: B. 2.1.](#)

Another crucial factor to consider in killer acquisition cases is data. As stressed in Part I, the accumulation of data can convey considerable advantages to companies by, for instance, allowing the incumbent to improve its consumer profiles or spot nascent firms with high potential.⁷⁶⁵ Hence, similar to the cases mentioned above, in killer acquisitions, the Commission would need to assess the nascent firms existing and future potential to collect valuable data and assess how it could potentially strengthen the incumbent's position in the future.

b) Loss of Potential Competition

Apart from the market position, it may be important to assess whether the acquisition may lead to a loss of a potential future competitive threat. In killer acquisition cases, this is one of the most intuitive theories of harm since, as established in Part II, such transactions allow the acquirer, among other things, to pre-empt potential future threats.⁷⁶⁶ At this point, it should be noted that the Guidelines generally consider the presence of potential competition on the market as a positive countervailing factor.⁷⁶⁷ However, even if not explicitly mentioned by the Guidelines, the merger with a potential competitor can also be viewed to adversely affect the market and, therefore, constitutes a theory of harm on its own.⁷⁶⁸

aa) Requirements

The Guidelines define potential competition as “the competitive pressure exerted on an undertaking's behaviour by a second firm which is not active in the same market, but which could or might enter the market.”⁷⁶⁹ To ascertain the presence of potential competitors, the European Commission developed two cumulative conditions:

⁷⁶⁵ [Part I: Chapter 2: A. 5.](#)

⁷⁶⁶ [Part II: Chapter 2: C.](#)

⁷⁶⁷ See, for instance, Case COMP/M.6266 – *Johnson&Johnson/Synthes*, para. 581, where the Commission found that there was still sufficient potential competition on the market post-transaction.

⁷⁶⁸ Käseberg in Bunte, Art. 2 EUMR, para. 161. Note, however, that the author states that this constellation may not play an important role in practice—a statement that does not seem to hold true in the context of killer acquisitions.

⁷⁶⁹ Rosenthal and Thomas, 144, para. 218, referring to the Horizontal Merger Guidelines, paras. 58–60 and 68–75.

- i. The potential rival must exert a significant constraining influence or be highly likely to grow into an effective competitive force.⁷⁷⁰ A significant constraining influence may even be found where a potential competitor does not yet have significant activities in the relevant market but is strongly incentivised to do so in the near future.⁷⁷¹ However, the mere assumption that a firm could exert significant competitive pressure in the future is insufficient.⁷⁷²
- ii. The European Commission cannot ascertain enough other potential rivals, which could maintain sufficient competitive pressure after the transactions.⁷⁷³ To this end, it is essential that it assesses the likelihood of the entry of other competitors, thereby also looking at whether the merging parties are the closest potential competitor or maybe even the only potential competitors of the other, thus constituting the most likely competitor in the absence of the transaction.⁷⁷⁴

It can be derived from these conditions that the Commission generally sets high standards of proof regarding the degree of potentiality required to classify the merging parties as 'potential competitors'. This is also reflected in the case law.

bb) Case Law

An illustrative case to show the high standards of proof required for the application of the loss of potential competition theory of harm is provided by *Essilor/Luxottica*.⁷⁷⁵ In this case, the European Commission assessed whether the merger between Essilor—the world's largest supplier of ophthalmic lenses—and Luxottica—the world's largest supplier of eyewear—would lead to a significant loss of competition. The Commission concluded that the merging firms' existing activities and planned entry and expansion strategies on the

⁷⁷⁰ Horizontal Merger Guidelines, para. 60 with further remarks.

⁷⁷¹ See, for instance, Case COMP/M.3340 – *ENI/EDP/GDP*, para. 344. In this case, it was found that GDP—a strong supplier of gas in Portugal—had strong incentives to enter the wholesale electricity market and thus “was, due to its market position in Portugal, likely to grow into an effective competitive force.”

⁷⁷² Case T-5/02 *Tetra Laval v Commission*, paras. 321 et seq.

⁷⁷³ Horizontal Merger Guidelines, para. 60 with further remarks.

⁷⁷⁴ See for instance, Case COMP/M.5096 – *RCA/MAV Cargo*, para. 75. This stands in contrast to the *Google/DoubleClick* case, where the European Commission found that other competitors would continue to exert sufficient competitive pressure after the transaction, see Case COMP/M.4731 – *Google/DoubleClick*, para. 278.

⁷⁷⁵ Case COMP/M.8394 – *Essilor/Luxottica*.

markets for the supply of frames, sunglasses, and ophthalmic lenses would not allow them to exercise sufficient competitive constraints on each other either as existing competitors or as potential rivals.⁷⁷⁶ Hence, the Commission cleared the transaction unconditionally.

Similarly, in *Posten AB/Post Danmark A/S*,⁷⁷⁷ which concerned a Swedish and Danish postal company, the European Commission found that the merging companies were unlikely to compete with one another. Among other things, the Commission argued that in order to become competitors, the parties would need to make “a strategic decision connected to a long-term commitment and [...] a significant investment for the entry”, which the Commission considered not likely enough to prohibit the transaction.⁷⁷⁸

cc) *Application to Killer Acquisitions*

Following the definition of traditional killer acquisitions, which constitutes a special case of the loss of potential theory of harm,⁷⁷⁹ the conditions stated above would need to be met. However, as has been established in the economic analysis of Part II, this form of killer acquisition may be the rule rather than the exception in digital markets.⁷⁸⁰ This observation also applies to the legal analysis since, in many cases, the potential future overlap may hardly be predictable at the moment of the transaction.⁷⁸¹ This is because the companies in question may often not operate in the same relevant market—especially where the innovation concerned holds disruptive potential—and, even where a competitive potential is conceivable, the assumption that the merging parties may eventually compete one day may commonly be fraught with a lot of uncertainty. Accordingly, by requiring “a significant likelihood that it [the potential competitor] would grow into an effective competitive force”,⁷⁸² thereby highlighting that this likelihood needs to lie in the near future, the Commission may often face difficulties in finding a sufficient degree of closeness between the merging parties and, consequently, may almost never meet the high thresholds required to find a sufficient degree of potentiality.

⁷⁷⁶ *ibid*, paras. 218–310.

⁷⁷⁷ Case COMP/M.5152 – *Posten AB/Post Danmark A/S*.

⁷⁷⁸ *ibid*, para. 38.

⁷⁷⁹ OECD (2020a), 31; see also [Part I: Chapter 1: A. 1.](#)

⁷⁸⁰ See [Part II: Chapter 2: B. 1.](#)

⁷⁸¹ For more information, see [Part III: Chapter 1: C. 1.4](#) and [Part III: Chapter 1: C. 1.5.b\).](#)

⁷⁸² Horizontal Merger Guidelines, para. 60.

This can also be assumed in view of the case law. For instance, in *Posten AB/Post Danmark A/S*, the Commission viewed, among other things, the requirement of a long-term commitment as insufficient to be considered a potential competitor. Given that the assessment of killer acquisitions typically requires a look into the distant future in order to ascertain the potential of start-ups to become a competitive threat to the incumbent's market position one day, it seems unlikely that the Commission would consider them potential competitors, especially when considering the current high standards of proof explained above.⁷⁸³ At the same time, it should be highlighted that the recently issued *Illumina/Grail* case indicates that the Commission is willing to move away from its long-standing practice of only considering the near future in killer acquisition cases—a point that this thesis will return to later.⁷⁸⁴

c) *Harm to Innovation Competition*

Given that the loss of potential competition may not provide a satisfying theory of harm in many killer acquisitions occurring in digital markets, the question arises whether the harm of innovation competition could constitute a more conclusive approach. As already touched on in the context of the market definition, the assessment of innovation competition has recently come increasingly into the focus of the European Commission, particularly in the context of pharmaceutical and agrochemical markets.⁷⁸⁵ Given that killer acquisitions can lead to the loss of important innovation streams, the following subsections will analyse this theory of harm in more detail.

aa) *Case Law*

Even though innovation has always been recognised as an important competitive parameter, which also reflects in the Merger Guidelines,⁷⁸⁶ it is only recently that the Commission has acknowledged the importance of considering innovation that goes beyond late-stage innovation activities, i.e., beyond potential competition occurring between products or services carrying a reasonable chance of being marketed.⁷⁸⁷ To better assess the loss of innovation in

⁷⁸³ [Part III: Chapter 1: C. 3.](#)

⁷⁸⁴ See [Part III: Chapter 1: C. 5.3.](#)

⁷⁸⁵ Schwalbe und Zimmer, 321; see also [Part III: Chapter 1: C. 1.5.](#)

⁷⁸⁶ See, for instance, Horizontal Merger Guidelines, para. 38, stating that “effective competition may be significantly impeded by a merger between two important innovators, for instance between two companies with ‘pipeline’ products related to a specific product market.”

⁷⁸⁷ [Part III: Chapter 1: C. 1.5.a\).](#)

such cases, the Commission has developed a novel theory of harm. Two particularly comprehensive analyses in this regard are provided by *Dow/Dupont*⁷⁸⁸ and *Bayer/Monsanto*⁷⁸⁹.

Looking at these two cases, it is striking that, in its innovation competition assessment, the Commission generally puts great emphasis on contestability and appropriability aspects. Contestability considerations are important in order to ascertain the extent to which the transaction concerned may allow the merging parties to internalise business stealing effects, referring to incentives to outcompete each other. The higher these effects are, the greater the opportunity cost of cannibalisation effects and the more likely it is that the transaction concerned eventually lowers the overall innovation incentives between the merging companies and in the market overall.⁷⁹⁰ To assess contestability, the Commission typically establishes (i) whether the merger reduces the merging parties' innovation incentives by eliminating innovation competition between them and, consequently, (ii) whether the transaction diminishes the overall competitive pressure within the market in a way that third parties' incentives to innovate post-transaction are also lowered.⁷⁹¹ Thereafter, the Commission typically balances the contestability aspects with appropriability benefits and merger-specific efficiencies,⁷⁹² thereby following the established economic theory that these sets of incentives lead to the maximisation of the overall incentive to innovate.⁷⁹³

A similar approach was also adopted by the General Court in *Deutsche Börse v Commission*, where it prohibited the merger on the ground that these competing stock exchanges pressured each other to innovate. It further established that trading technology generally greatly benefits from the efforts of the companies to outperform each other in order to win market shares. Accordingly, the General Court concluded that whilst clearing the merger would allow them to appropriate greater profits from each innovation by allowing them to ap-

⁷⁸⁸ Case COMP/M.7932 – *Dow/DuPont*.

⁷⁸⁹ Case COMP/M.8084 – *Bayer/Monsanto*.

⁷⁹⁰ See Kokkoris and Valletti, 228.

⁷⁹¹ See Case COMP/M.7932 – *Dow/DuPont*, paras. 2000–2019, 2043–2048, 2856; Case COMP/M.8084 – *Bayer/Monsanto*, paras. 1025–1038.

⁷⁹² Case COMP/M.7932 – *Dow/DuPont*, paras. 2044–2046, 2064 and 3267; Case COMP/M.8084 – *Bayer/Monsanto*, paras. 1043–1045.

⁷⁹³ For more information on this topic, see, for instance, Federico, Morton and Shapiro, 125–190.

ply their innovations to more customers, banning the transaction maximises innovation incentives by continuing to encourage the two stock exchanges to contest each other's market shares.⁷⁹⁴

bb) Reflecting on the Case Law

Drawing on the findings above, it can be found that, when assessing innovation competition, the Commission and the General Court put great emphasis on the question of whether the clearance of the merger would lower incentives to innovate, which would eventually lead to less and lower-quality innovation output in the market. By doing so, they generally adopt an output-based understanding of innovation, which leads them to assess innovation primarily through the lens of incentives.⁷⁹⁵ Put differently, they primarily focus their analyses on the effects that the increased concentration may have on companies' incentives to further invest in innovation efforts post-transaction.

In *Dow/DuPont* and *Bayer/Monsanto*, this approach led the Commission to consider quantitative and qualitative evidence,⁷⁹⁶ thereby relying on backwards-looking metrics. By doing so, it primarily assessed whether companies would engage in more or less innovation quantity and quality post-transaction in a specific market or industry. It, however, did not account for other factors, such as whether the merging parties will still be incentivised to explore various innovation avenues post-transaction that lie outside the realm of horizontal competition or whether the transaction will allow the incumbent to more easily block alternative innovation paths that may challenge its structural position and the share of surplus value it can extract from its value chain in the long term.⁷⁹⁷ In short, it did not sufficiently consider how the transactions may affect the innovation direction and diversity post-transaction—two crucial aspects in killer acquisition cases.⁷⁹⁸

⁷⁹⁴ For the whole judgement, see Case T-175/12 *Deutsche Börse v Commission*.

⁷⁹⁵ A comprehensive discussion on how innovation is understood under the current analytical framework is offered by Ahuja, 7 et seq.

⁷⁹⁶ Deutscher and Makris (2023), 369, finding that, to this end, the Commission considered the number of patent citations and new AI launches, see Case COMP/M.7932 – *Dow/DuPont*, paras. 387–395 and 2436–2446; Case COMP/M.8084 – *Bayer/Monsanto*, paras. 271–273 and 1109–1063.

⁷⁹⁷ Deutscher and Makris (2023), 369; Lianos, 22. See also Kerber (2011), 193–194, who criticises that the mainstream economic analysis does not sufficiently consider the quality of innovation as well as the direction of innovation efforts.

⁷⁹⁸ See [Part II: Chapter 2: D. 2.2.](#)

cc) *Application to Killer Acquisitions*

By adopting an outcome-based understanding of innovation competition, thereby relying on backwards-looking metrics to assess potential harms to competition innovation, the current approach taken to assess harm in innovation markets may be inapt in killer acquisition cases. This is because, due to the young nature of nascent firms, there usually exists only very limited historical information on the start-up concerned on which the Commission or the European Courts could rely in such cases. Accordingly, unlike in the above-mentioned transactions where the Commission primarily considered quantitative and qualitative metrics by, for instance, looking at existing patents, a similar approach in acquisitions involving nascent firms may often not be conclusive. Moreover, by neglecting important questions about how the transaction could adversely affect the innovation direction and diversity beyond the scope of horizontal competition, which is particularly important in the context of killer acquisitions in digital markets where Arrow's cannibalisation effects can also occur outside the acquirer's home market,⁷⁹⁹ the Commission may insufficiently recognise the harm that may emanate from such transactions regarding the influence the incumbent can take over the start-up's development. Put differently, the current approach may bear the risk that the Commission does not adequately consider how the transaction could contribute to the incumbent's ability to act as a digital architect, allowing it to steer innovation in a way that best favours it, thereby potentially blocking the start of a new innovation cycle that may be to its detriment.

5.2. Non-Horizontal Transactions

Having established that the harm emanating from killer acquisitions in digital markets would rarely be caught by the framework provided for horizontal transactions, the following subsection will assess whether the theories of harm provided by the framework foreseen for non-horizontal transactions are more apt to address the underlying concerns arising from such transactions.

a) *Market Position*

Similar to horizontal transactions, the European Commission commonly starts its analysis by assessing the merging parties' market share and HHI, respectively. According to the Non-Horizontal Merger Guidelines, the Commission is unlikely to find competition concerns where the market shares post-merger

⁷⁹⁹ [Part II: Chapter 2: D. 1.2.](#)

in each of the markets concerned is below 30% and the HHI below 2,000.⁸⁰⁰ If exceptional circumstances are present, for instance, where a merger involves a firm that is likely to expand significantly in the near future, the Commission may also extensively investigate such mergers, even if these thresholds are not met.⁸⁰¹

As already stated in the context of horizontal transactions, killer acquisitions are likely to be regarded as exceptions, as start-ups typically involve only low market shares at the moment of the transaction.⁸⁰²

b) *Foreclosure Effects*

When assessing unilateral effects in non-horizontal transactions, the Commission generally puts much weight on foreclosure. According to the current understanding of foreclosing in the Non-Horizontal Merger Guidelines, the term is “used to describe any instance where actual or potential rivals’ access to supplies or markets is hampered or eliminated as a result of the merger, thereby reducing these companies’ ability and/or incentive to compete.”⁸⁰³

aa) *Vertical Transactions*

In the context of vertical mergers, the Guidelines distinguish between input and consumer foreclosure. The former refers to a situation where the merger is likely to raise the costs of downstream rivals by restricting their access to an important input and potentially cutting off competitors in the downstream market.⁸⁰⁴ Customer foreclosure, on the other hand, refers to a situation where the merger is likely to foreclose upstream actual or potential competitors by limiting their access to a sufficient customer base in the upstream market, thus reducing their incentive or ability to compete in the same relevant market.⁸⁰⁵

Input and customer foreclosure only raise concerns if (i) the merging parties would have the ability to foreclose access to inputs or restrict access to a significant customer base, (ii) the parties would have the incentive to foreclose

⁸⁰⁰ Non-Horizontal Merger Guidelines, para. 23.

⁸⁰¹ *ibid*, para. 20.

⁸⁰² [Part III: Chapter 1: C. 5.1.a\)aa\).](#)

⁸⁰³ Non-Horizontal Merger Guidelines, para. 18.

⁸⁰⁴ *ibid*, paras. 31 et seq.

⁸⁰⁵ *ibid*, paras. 58 et seq.

the market and (iii) the foreclose strategy would result in a SIEC by having detrimental effects on consumers in the downstream market.⁸⁰⁶

bb) Conglomerate Transactions

Competition concerns may also arise in conglomerate mergers.⁸⁰⁷ The Commission usually investigates conglomerate mergers where the target's product or service is complementary to the acquirer's own products or services and, consequently, may give rise to so-called 'range effects'.⁸⁰⁸ One of the main competition concerns arises when the merger allows the merging companies to combine their products or services in related markets, thereby conferring them the ability and incentive to leverage a strong market position from one market to another.⁸⁰⁹ Popular strategies in this regard are, for instance, to tie⁸¹⁰ or bundle⁸¹¹ the products or services in question. In addition, also exclusionary practices, such as degrading interoperability between their own products or services and those of competitors⁸¹², may raise major concerns.

To find a conglomerate merger anti-competitive, the merging parties need to have the ability and the incentive to foreclose competitors post-transaction. The ability to foreclose requires the merged parties to exhibit significant market power in at least one of the markets in question. In general, a significant

⁸⁰⁶ *ibid.*, paras. 35–38 and 58 et seq.

⁸⁰⁷ Non-Horizontal Merger Guidelines, para. 91.

⁸⁰⁸ Boyce and Lyle-Smythe, para. 8.250. Note that range effects are also referred to as 'portfolio power'.

⁸⁰⁹ See, for instance, Case COMP/M.5984 – *Intel/McAfee*.

⁸¹⁰ It generally describes a situation where a vendor is unwilling to sell one product or service (the 'tying product') unless the purchaser also buys another (the 'tied product'). Note that tying can occur in two different forms: technical and contractual. The former describes instances where the 'tying product' only functions combined with the 'tied product' and not with any alternative products or services offered by competitors. The latter, on the other hand, refers to instances where the customer is bound by contract to purchase the tied, see Non-Horizontal Merger Guidelines, para. 97.

⁸¹¹ It refers to the way products or services are offered to consumers. It does not matter whether they are sold in fixed proportions or separately; instead, it is decisive that the bundled price is lower than the stand-alone price.

⁸¹² See, for instance, Case COMP/M.5984 – *Intel/McAfee*, where the Commission established that the merging parties (i) would have the necessary market power in the central processing units and chipsets market and (ii) the incentive to technically tie the products and degrade interoperability with rival products in endpoint security solutions, eventually resulting in a SIEC. In contrast, in Case COMP/M.6281 – *Microsoft/Skype* the Commission established that despite Microsoft having the ability to degrade interoperability of Skype with competing operating systems, Microsoft would not have the incentives to eventually engage in such a practice.

degree of market power requires that the product or service in question is regarded as particularly important by many customers and that there are no sufficient alternative offers.⁸¹³ Regarding the incentives to foreclose rivals, the European Commission generally considers foreclosure strategies to be likely if they are profitable for the merged company, i.e., if there is sufficient incentive to engage in such behaviour.⁸¹⁴ Finally, the Commission needs to take an overall view of the likely effects of a foreclosure strategy on effective competition.⁸¹⁵ The fact that individual competitors suffer disadvantages as a result of such a strategy is thereby not relevant in itself, but a weakening of the competitiveness and competitive incentives of competitors as a whole is.⁸¹⁶ It should be added that the finding of foreclosure effects in conglomerate mergers is generally rather rare and attached to high standards of proof,⁸¹⁷ probably because they often involve pro-competitive aspects.

cc) *Application to Killer Acquisitions*

If the Commission does not find sufficient horizontal overlaps, i.e., if it considers the potential killer acquisition to be non-horizontal, it may look at foreclosure effects. Depending on the facts of each case, it may do so either under the framework of vertical or conglomerate mergers. Although the finding of harm is not excluded, as such transactions may indeed incentivise the incumbent to engage in foreclosure strategies, the assessment of harm under the non-horizontal framework generally bears the risk that the harm of the acquisition in question is underestimated. This is because (i) non-horizontal mergers are generally considered less harmful than horizontal transactions⁸¹⁸ and, (ii) as explained in Part II, on a market level, the more common form of

⁸¹³ Non-Horizontal Merger Guidelines, para. 99 referring to Case COMP/M.3732 – *Procter & Gamble/Gillette*, para. 110.

⁸¹⁴ *Körber* in *Immenga/Mestmäcker*, Art. 2 EUMR, para. 592.

⁸¹⁵ Non-Horizontal Merger Guidelines, paras. 93 et seq.

⁸¹⁶ *ibid*, para. 111.

⁸¹⁷ Cases in which the Commission denied the merging companies' ability to foreclose the market through tying and bundling practices include, for instance, Case COMP/M.3304 – *GE/Amersham*; Case COMP/M.4731 – *Google/DoubleClick*, paras. 257 et seq.; Case COMP/M.5932 – *NewsCorp/BSkyB*, paras. 296 et seq.; Case COMP/M. 6104 – *Safran/SNPE Matériaux Energetiques/Regulus*, paras. 101 et seq.; Case COMP/M.6560 – *Cisco System/NDS Group*, paras. 97–103 and 220–112; Case COMP/M.7637 – *Liberty Global/BASE Belgium*, paras. 355–416. Cases in which the Commission found insufficient evidence for the merger to degrade interoperability include, for instance, Case COMP/M.3978 – *Oracle/Siebel*; Case COMP/M.5669 – *Cisco/Tandberg*; Case COMP/M.6281 – *Microsoft/Skype*, paras. 133 et seq.

⁸¹⁸ This was discussed in more detail in [Part III: Chapter 1: C. 4.1.b](#).

reverse killer acquisitions may often exhibit positive effects.⁸¹⁹ In other words, by focusing on foreclosure effects only, the Commission may run the risk of insufficiently recognising the extent to which the transaction may strengthen the incumbent's market or ecosystem position by allowing it to, for instance, (i) intensify the loyalty of those users that view the new product or service as a complement to the existing products or services offered by the incumbent's platform or ecosystem whilst (ii) keeping other users that might consider the start-up's product or service partially substitutable to those products or services already available.⁸²⁰ Hence, even if the transaction concerned may not raise foreclosure concerns that are considered sufficiently serious to prohibit the transaction, the acquisition could nevertheless enable the incumbent to eliminate a potential threat in the long run, thereby enabling it to cement its position either in the market or, more broadly, in the ecosystem.

c) *Platform Envelopment*

Based on the findings made in the preceding subsection, according to which the current non-horizontal theories of harm seem to insufficiently recognise the harm that may emanate from start-up acquisitions, Cr  mer, de Montjoye and Schweitzer have developed a new theory of harm that is based on the economic theory called 'platform envelopment'⁸²¹—a term that was originally coined by Eisenmann, Parker and Van Alstyne in 2011.⁸²²

aa) *Defining and Understanding Platform Envelopment*

The platform envelopment theory assesses entry by one platform into a neighbouring market through the combination of "its own functionality with that of the target in a multi-platform bundle that leverages shared user relationships."⁸²³ To illustrate this phenomenon, Eisenmann, Parker and Van Alstyne refer to Microsoft's launch of Windows Media Player in 1998.

To better understand the Microsoft example, it is important to highlight at the outset that, by both requiring developers to code software functionalities and interoperability, Media players and PC operating systems share common components. Accordingly, when developing a media player, Microsoft can benefit from valuable economies of scope, thereby generating significant efficiencies.

⁸¹⁹ [Part II: Chapter 2: D. 3.1.](#)

⁸²⁰ EC Report, 11.

⁸²¹ *ibid*, 120; see also Bourreau and de Streel (2019), 14–16.

⁸²² See Eisenmann, Parker and Van Alstyne, 1270–1285.

⁸²³ *ibid*, 1271.

In addition, given that users of media players and PC operating systems typically overlap, the integration of a media player into its operating system allows the incumbent to improve the functionalities of its product, eventually creating valuable consumption synergies.

Based on these findings, Eisenmann, Parker and Van Alstyne argue that, by tying its own media player with the other features of the Windows' ecosystem, the market entry into media players allowed Microsoft to leverage economies of scope and consumption synergies. This led a substantial number of Windows users to switch from competing media players to Windows Media Player, which ultimately allowed the technology giant to overtake the largest media player at the time, Real.⁸²⁴

bb) Underlying Theory of Harm

Drawing on the economic theory of Eisenmann, Parker and Van Alstyne, the European Commission Report further elaborated upon the concept of platform envelopment with respect to merger control, finding that, in the context of digital markets, a broader view of the position of incumbents may be necessary; one that takes into account the strengthening and enclosing of a specific 'technological space' or 'users' space'. Crémer, de Montjoye and Schweitzer argue that incumbents frequently purchase nascent companies to integrate them into their ecosystem, which in turn enables them to attract and retain consumers who, in the absence of the transaction, may still use the rivals' products or services. Combining the acquirer's network effects with those of the target, they find, allows the incumbent to expand its scope and eliminate the risk that the target could steal users from it.⁸²⁵ In short, they derive the harm from the strengthening and enclosing of an incumbent's particular 'users' space' through the expansion of network effects from one platform to another. In turn, this raises the question of whether such an approach may be useful in killer acquisition cases occurring in digital markets.

cc) Application to Killer Acquisitions

Although the platform envelopment theory proposed in the European Commission Report is, in principle, welcome in killer acquisition cases as it is very broad and focuses on network effects—an aspect that, as explained above, is

⁸²⁴ *ibid.* See also Lécuyer, 70–71.

⁸²⁵ EC Report, 122.

important in such cases⁸²⁶—it is also very vague and lacks clear guidance as to how it would need to be implemented. For instance, it is unclear how exactly the Commission would have to define the users’/technological space. When would the Commission need to look at the users’ base, and when would it consider the technological space? Would a user/technology overlap suffice to find harm? How large would this overlap need to be? These questions show that whilst, due to its extremely broad nature, the main idea of platform envelopment is interesting regarding killer acquisitions, it is too vague and does not provide sufficiently concrete tools to determine the harm that could emanate from such transactions. Moreover, it would most likely not be able to cover all concerns arising from killer acquisitions. This particularly applies to transactions that involve a company with disruptive potential targeting nonconsumers, i.e., a new market. This is because, in such cases, user and technology overlaps may often be difficult to ascertain at the time of the acquisition since the start-up targets consumers that are precisely not covered by the incumbent and, to this end, develops a new technology whose resemblance to the existing one may only be limited.

5.3. Combining Horizontal and Non-Horizontal Aspects: Illumina/Grail

Having established that none of the theories of harm discussed above are apt to tackle killer acquisitions individually, it is questionable whether a mixture of different theories of harm would be more conclusive. In fact, this is exactly what the Commission did in *Illumina/Grail*, which has also been referred to as the first killer acquisition case tackled by the European Commission.⁸²⁷

a) Novel Theory of Harm

In this case, Illumina—an unmatched supplier of NGS systems for genetic and genomic analysis—vertically integrated Grail—a company that develops blood tests for early cancer detection. As already explained above, the transaction

⁸²⁶ [Part III: Chapter 1: C. 5.1.a\)dd\).](#)

⁸²⁷ See, for instance, Modrall Jay, ‘Illumina/Grail Prohibition: The End of the Beginning for EU Review of Killer Acquisitions?’ (*Kluwer Competition Law Blog*, 8 September 2022) <<http://competitionlawblog.kluwercompetitionlaw.com/2022/09/08/illumina-grail-prohibition-the-end-of-the-beginning-for-eu-review-of-killer-acquisitions/>> accessed 27 December 2023.

was made known to the European Commission through Art. 22 EUMR, whereupon the Commission opened an investigation.⁸²⁸

The Commission found that Grail and its rivals depend on Illumina's NGS systems to develop their tests and ascertained that, due to the lack of alternatives to Illumina's product in the short to medium term, the transaction would allow Illumina to foreclose the market, thereby stifling innovation and mitigating options in the blood-based early cancer detection test market. It further established that even though the acquirer's sales of NGS technology to these companies are at a low proportion of Illumina's sales and profits, NGS-based early cancer detection testing is on the rise and expected to expand rapidly in the coming years—presumably reaching more than €40 billion per year by 2035. Considering the high market potential and the closeness of innovation competition between Illumina and Grail, the Commission concluded that Illumina would have great incentives to foreclose Grail's competitors post-transaction, even if only in the future. The Commission, therefore, found that by letting Illumina integrate Grail, the former would likely be incentivised to foreclose Grail's competitors, thereby killing the prevailing 'close' innovation race between developers of early cancer detection tests.⁸²⁹ By doing so, it developed a novel theory of harm which combines both innovation concerns with the protection of potential future competition in the context of vertical transactions.

b) *Contrasting Decisions: European Commission v Federal Trade Commission*

Interestingly, in contrast to the Commission's decision, the Chief Administrative Law Judge of the US Federal Trade Commission approved the transaction between Illumina and Grail on 1 September 2022, finding that no firm is close to starting to market its product and that, within the next five to seven years, no competitor of Grail would have a cancer test that would be reasonably interchangeable with Grail's test. Hence, it found that although Illumina may have the possibility to foreclose other rival companies developing cancer tests from accessing its NGS technology, it would have no incentives to do so.⁸³⁰

⁸²⁸ For more information on the *Illumina/Grail* case regarding Art. 22 EUMR, see [Part III: Chapter 1: B. 2.5.](#)

⁸²⁹ EC, 'Mergers: Commission prohibits acquisition of GRAIL by Illumina' (EC Press Release, 6 September 2022) <https://ec.europa.eu/commission/presscorner/detail/en/ip_22_5364> accessed 27 December 2023.

⁸³⁰ See FTC, Complaint Counsel's Notice of Appeal, 2 September 2022.

By considering a shorter time frame, within which the Federal Trade Commission did not find any competitive concerns, the Federal Trade Commission, therefore, stuck to the more traditional way of assessing vertical mergers compared to the European Commission and did not consider any potential future competition aspects. Accordingly, this opposing decision to the European Commission's judgement demonstrates how the traditional consideration of foreclosure effects in vertical merger cases can lead to completely different outcomes than where the analysis includes potential future competition aspects that lie in the distant future.

c) *Application to Killer Acquisitions*

At the outset, it should be highlighted that the European Commission's approach taken in *Illumina/Grail* is generally highly welcome and constitutes a step in the right direction when it comes to killer acquisitions in general. Particularly encouraging is the fact that the Commission considers the transaction's effects in the distant future—an exercise that is generally indispensable to ascertain the potential of a nascent firm but which so far has often been neglected in the loss of potential competition theory of harm.⁸³¹ Moreover, by blocking the transaction despite its uncertain outcome, the case shows the Commission's ambition to lean more towards Type I errors in such cases, which, as explained in Part II, is a positive development.⁸³²

With regard to killer acquisitions in digital markets, more specifically, it is, however, questionable whether the approach adopted by the Commission would be useful. After all, as already highlighted earlier, the innovation process in digital markets is generally characterised by less foreseeable innovation developments than in the pharmaceutical or agrochemical sector.⁸³³ Thereby, it is difficult to anticipate whether the Commission would also be willing to adopt a similar approach in digital markets as, to date, it is unknown how robust the evidence was in the *Illumina/Grail* case or, put differently, how speculative the Commission's assumptions about Grail and the development of NGS-based early cancer detection testing are—information that is not publicly available and may only become clearer with the issuance of the General Court's decision. In this regard, it will generally be interesting to see whether and how the General Court rules regarding the required imminence of potential future competition and whether, due to the nature of killer acquisitions, it

⁸³¹ See [Part III: Chapter 1: C. 5.1.b](#)).

⁸³² [Part II: Chapter 3: B](#).

⁸³³ See [Part III: Chapter 1: C. 1.5.b](#)).

will be willing to stretch the existing requirements of finding the loss of potential competition by accepting the consideration of a longer time frame, even though such an approach is generally fraught with more uncertainty. Hence, the future of the enforcement of killer acquisitions in digital markets under the current framework largely depends on how the General Court will consider these aspects.

6. Other Considerations Relevant to the Substantive Analysis

Before banning a transaction that is found to have anti-competitive effects, the European Commission needs to take into account efficiency considerations as well as the failing firm defence. They will be discussed in more detail in the following subsections.

6.1. Efficiency Considerations

Even where the Commission finds a transaction to raise competition concerns, it can nevertheless declare it compatible with the Common Market if there is sufficient evidence demonstrating that the efficiencies generated by the transaction are likely to incentivise the notifying parties to act pro-competitively.

a) Conditions

To accept efficiency claims, the Commission requires the parties to meet the following three conditions cumulatively:⁸³⁴

- i. The merger is likely to bring about significant operating efficiencies, which will likely materialise.
- ii. The efficiencies brought forward must be a direct result of the merger, i.e., they need to be merger specific and must not be capable of being achieved through less anti-competitive means.
- iii. The merger needs to directly benefit customers in the relevant market by providing them, for instance, lower prices or new or improved products or services (pass-on to consumers).

⁸³⁴ See Horizontal Merger Guidelines, para. 78; Non-Horizontal Merger Guidelines, para. 53.

Efficiency claims typically include cost savings, service or product improvements or new product introductions. They must be reasoned, quantified and, if necessary, supported by internal studies and documents.⁸³⁵

b) *Application to Killer Acquisitions*

Given the ambiguous effects that killer acquisitions can have on innovation and competition,⁸³⁶ the efficiency defence may play an important role in such transactions. This particularly applies to reverse killer acquisitions since, by integrating the target, such transactions can generate valuable synergies and significant efficiencies whilst creating important innovation incentives.⁸³⁷ It is, however, questionable whether these efficiencies can outweigh the potential harm that may emanate from such transactions.⁸³⁸ Even though the answer is, of course, strongly case-dependent and cannot be generalised, it ought to be noted that the standards of proof for efficiency claims point towards high thresholds. This also reflects in the case law of the European Commission and the European Courts, where they have generally taken a rather reluctant stand when it comes to accepting efficiency claims.⁸³⁹ In light of the potential harm killer acquisitions can cause, such a reluctant attitude seems, however, generally welcome, especially if the Commission wants to lean more towards Type I errors, as suggested in Part II.⁸⁴⁰

6.2. Failing Firm Defence

If the Commission finds a transaction to lead to a significant impediment of competition, the transaction may nevertheless be cleared if the conditions of the failing firm defence are met. The failing firm defence offers a way to clear mergers in cases otherwise characterised by significant anti-competitive effects. The rationale of the defence is that if at least one of the merging firms failed after prohibiting the transaction, there would be no loss of competition as a result of the transaction.⁸⁴¹ The first case in which the Commission extensively dealt with this form of defence was *Kali Salz/MDK/Treuhand*, where it cleared the merger on this ground despite leading to a dominant position

⁸³⁵ Boeshertz, Lahbabi and Moonen, 45.

⁸³⁶ [Part II: Chapter 2: D. 3.](#)

⁸³⁷ This was discussed in more detail in [Part II: Chapter 2: D. 3.1.](#)

⁸³⁸ For more information on the harm that such transactions can cause, see [Part II: Chapter 2: D. 2.2](#) and [Part II: Chapter 2: D. 3.2.](#)

⁸³⁹ See, for instance, Case COMP/M.7724 – ALS/*Arianespace*, paras. 434–444.

⁸⁴⁰ [Part II: Chapter 3: B.](#)

⁸⁴¹ Horizontal Merger Guidelines, para. 90; Schwalbe and Zimmer, 614.

of 98% market share in the relevant market.⁸⁴² Although the European Court of Justice eventually overruled the Commission's decision, it upheld and confirmed the conditions developed by the Commission to find a failing firm defence,⁸⁴³ which will be discussed next.

a) Conditions

Ever since the *Kali Salz/MDK/Treuhand* merger, the failing firm defence has become an integral part of the EUMR and has also been adopted by the Commission in the Horizontal Merger Guidelines.⁸⁴⁴ For the Commission to find sufficient grounds to consider the failing firm defence, the following conditions must be met:⁸⁴⁵

- i. The market exit of the firm in question would have been inevitable in the near future;
- ii. There is a lack of an alternative purchaser for the failing firm or its assets; and
- iii. In the absence of the transaction, the failing firm's assets would inevitably exit the market.

The first condition is typically met if, in the absence of the transaction, the target company would be forced to exit the market in the near future due to financial difficulties. Put differently, it requires the target company to be unable to secure the necessary additional funding that would help it survive. The second condition is met if no other company whose acquisition would raise fewer competition concerns is willing to buy the failing company in a timely manner before the target may have to exit the market. Finally, the last condition requires that the merger leads to a substantially less anti-competitive outcome than the firm's exit.⁸⁴⁶

⁸⁴² Note that the first case was Case IV/M.053 – *Aérospatiale-Alenia/de Havilland*. However, it was not until 1993 that it developed the criteria for it, see Case IV/M308 – *Kali Salz/MdK/Treuhand*.

⁸⁴³ Joined Cases C-68/94 and C-30/95 *French Republic and Others v Commission*.

⁸⁴⁴ Horizontal Merger Guidelines, paras. 89–91; see also Case COMP/M.6796 – *Aegean/Olympic II*, paras. 643 et seq. where the failing defence was successfully applied.

⁸⁴⁵ Horizontal Merger Guidelines, para. 90.

⁸⁴⁶ For more information regarding the conditions, see Körber in Immenga/Mestmäcker, Art. 2 EUMR, paras. 387–390; Käseberg in Bunte, Art. 2 EUMR, paras. 216–218; Schwalbe and Zimmer, 614–620.

b) *Application to Killer Acquisitions*

In the context of killer acquisitions, the failing firm defence may be useful in cases where a start-up with an innovation would have to exit the market in the absence of the transaction. In other words, it could play an important role when a nascent firm (i) would not succeed as a stand-alone business, i.e., could not continue its innovation efforts in non-occurrence of the merger, and (ii) would not be bought by any other firm whose effects on competition would be less concerning. The first condition can be ascertained by looking, for instance, into financial statements and internal documents, which should generally give sufficient insight into existing resources to fund the project in question. Moreover, the Commission may also consider whether alternative financing options can be ruled out. With regard to the question of whether there could be other interested acquirers, it should be highlighted that the problem is often that, compared to incumbents, smaller companies have fewer resources to build up the firm concerned and may be less willing to take such a risk.

The application of the failing firm defence generally makes sense only if saving a nascent firm benefits competition and innovation more than when the company had to exit the market. For instance, clearing a transaction on the ground of a failing firm defence would probably do more harm than good in cases where the merging companies exhibit a strong user overlap, which could contribute to cementing the incumbent's market position and lead to a substantial restriction of competition on the market to the detriment of (potential) rivals. In contrast, it may be beneficial to consider the failing firm defence in cases in which the transaction may allow a large company to enter a market where another big firm is already well-established. After all, in such cases, the acquirer has comparable resources and experience to compete effectively with the established company. An example in this regard would be if, for instance, the transaction concerned allowed Google to enter the streaming market and compete with Netflix. However, these are just broad examples to show where the defence could or could not apply; in practice, such an exercise naturally requires a nuanced and case-specific analysis of the effects of the acquisition concerned.

D. Remedies

If the European Commission concludes that a merger harms competition, the parties can propose commitments, which are more commonly called ‘remedies’.⁸⁴⁷ They aim to render the concentration compatible with the Common Market by eliminating the competition concerns raised by the Commission.⁸⁴⁸ Remedies may be submitted at the screening stage of Phase I⁸⁴⁹ or in Phase II investigations⁸⁵⁰. The commitments must be made by the parties themselves as only they have all the necessary information to show that a remedy would eliminate the competition concerns raised by the Commission.⁸⁵¹

1. Conditions

The general principles that guide the Commission’s assessment of proposed commitments are set out in the Commission’s Remedy Notice.⁸⁵² The Notice explains that in order for commitments to be accepted, they need to (i) eliminate the competition concerns entirely and (ii) be effective and comprehensive.⁸⁵³ Moreover, the remedies proposed must be proportionate and capable of being implemented within a short period.⁸⁵⁴ If the Commission finds the remedies proposed insufficient, it needs to prohibit the transaction.⁸⁵⁵

2. Types of Remedies

The following two types of remedies are commonly differentiated: structural and behavioural remedies.⁸⁵⁶ The former includes, for instance, the divestiture of specific assets⁸⁵⁷ or the licensing of specific assets⁸⁵⁸, whereas the latter can,

⁸⁴⁷ Note that an encompassing analysis of merger remedies is provided by Davies and Lyons.

⁸⁴⁸ EC, Remedies Notice, para. 2.

⁸⁴⁹ Art. 6(2) EUMR.

⁸⁵⁰ Art. 8(2) EUMR.

⁸⁵¹ EC, Remedies Notice, para. 6.

⁸⁵² See EC, Remedies Notice.

⁸⁵³ *ibid*, paras. 9 and 15–17.

⁸⁵⁴ *ibid*; see also Recital 30 EUMR.

⁸⁵⁵ *ibid*, para. 6.

⁸⁵⁶ Kwoka and Moss, 981 *et seq.*; see also Davies and Lyons, 37–43.

⁸⁵⁷ See, for instance, Case COMP/M.6497 – *Hutchison 3G Austria/Orange Austria*, where the Commission cleared the merger in Phase II.

⁸⁵⁸ See, for instance, Case COMP/M.3732 – *Procter & Gamble/Gillette*, where the divestiture was combined with cobrand licensing. In general, licensing is a common remedy in the

for example, aim to ensure access to essential inputs⁸⁵⁹ or guarantee interoperability⁸⁶⁰. Drawing a clear distinction between these remedies can, however, generally be challenging as they may sometimes also consist of a mixture of both.⁸⁶¹ Hence, some authors further distinguish access remedies,⁸⁶² which include aspects of both structural and behavioural remedies.⁸⁶³

2.1. Structural Remedies

There is no universally accepted definition of the term ‘structural remedy’.⁸⁶⁴ In general, structural remedies are featured by two characteristics: (i) they are typically irreversible, and (ii) there is no need for ongoing monitoring by the enforcement authority.⁸⁶⁵ Accordingly, they can be viewed as one-off measures.⁸⁶⁶

Most commonly, structural remedies occur in the form of divesting a business to a suitable purchaser.⁸⁶⁷ Probably, this is because divestiture is the best and most effective remedy to remove competition concerns identified in the substantial analysis.⁸⁶⁸ Thereby, divestiture requires that it is viable and that the divested business can compete effectively with the merged entities on a lasting basis.⁸⁶⁹

2.2. Behavioural Remedies

Behavioural remedies, which in the Notice are referred to as ‘other remedies’,⁸⁷⁰ can be viewed as “commitments aimed at guaranteeing that competi-

pharmaceutical market, see, for instance, Case COMP/M.1846 – *Glaxo Wellcome/SmithKline Beecham*.

⁸⁵⁹ See, for instance, Case IV/M.877 – *Boeing/McDonnell Douglas*; Case IV/M.950 – *Hoffmann-La Roche/Boehringer Mannheim*.

⁸⁶⁰ See, for instance, Case COMP/M.5984 – *Intel/McAfee*, where the parties proposed to ensure the interoperability of the merging products with those of the rivals.

⁸⁶¹ See Rosenthal and Thomas, 241–242; Boyce and Lyle-Smythe, para. 8.183; Körber in Immenga/Mestmäcker, Art. 8 EUMR, para. 156 with further remarks.

⁸⁶² For instance, Maier-Rigaud and Loertscher, 3 et seq.

⁸⁶³ Maier-Rigaud and Loertscher, 3.

⁸⁶⁴ For a more comprehensive discussion on the definition of structural remedies, see Maier-Rigaud, 209 et seq.

⁸⁶⁵ See Davies and Lyons, 41 with further remarks.

⁸⁶⁶ Maier-Rigaud, 209.

⁸⁶⁷ EC, Remedies Notice, paras. 22 et seq.

⁸⁶⁸ *ibid.*, paras. 17 and 22.

⁸⁶⁹ *ibid.*

⁸⁷⁰ *ibid.*, para. 61.

tors enjoy a level playing field in the purchase or use of some key assets, inputs or technologies that are allowed by the merging parties”.⁸⁷¹ Accordingly, they aim to regulate the ongoing conduct of the merging undertakings. By requiring ex-post monitoring, their enforcement is, however, generally more difficult than the enforcement of structural remedies.⁸⁷² When applied as an independent measure,⁸⁷³ the Commission requires that their effects are ‘at least equivalent’ to a divestiture,⁸⁷⁴ i.e., they must entirely eliminate the anti-competitive effects of the concentration and preserve the competitiveness of the market structure. Behavioural remedies may, however, also be used just as accompanying measures, either as ancillary restraints or as a part of a remedies package.⁸⁷⁵ In any way, the commitments put forward by the parties should not require medium or long-term monitoring measures.⁸⁷⁶

2.3. Access Remedies

Access remedies, also referred to as quasi-structural remedies,⁸⁷⁷ aim to remove the competition concerns identified in the substantive analysis by requiring that access is ensured at appropriate terms to an asset necessary for third parties to compete. Thereby, the asset in question can be a key infrastructure or intellectual property, like technology or patents.⁸⁷⁸

Access remedies primarily seek to tackle high barriers to entry or expansion in order to allow third parties to penetrate the market concerned or to compete for a larger part of the market more easily.⁸⁷⁹ For instance, this can be achieved through the transfer of an asset or, as is more commonly the case, through a license, lease or any other type of agreement that leaves the ownership of the assets unchanged.⁸⁸⁰ Access remedies are viewed to form a separate category because they are behavioural remedies which can, however, have similar

⁸⁷¹ Motta, Polo and Vasconcelos, 619.

⁸⁷² Körber in Immenga/Mestmäcker, Art. 8 EUMR, 164.

⁸⁷³ Note that independent behavioural remedies are only applied exceptionally, see Körber in Immenga/Mestmäcker, Art. 8 EUMR, para. 163.

⁸⁷⁴ EC, Remedies Notice, para. 61.

⁸⁷⁵ Körber in Immenga/Mestmäcker, Art. 8 EUMR, paras. 161–162.

⁸⁷⁶ EC, Remedies Notice, para. 15.

⁸⁷⁷ OECD (2011), 20. Canapa, 244.

⁸⁷⁸ Maier-Rigaud and Loertscher, 6; see also Canapa, 244–248.

⁸⁷⁹ *ibid.*

⁸⁸⁰ *ibid.*

effects as structural remedies.⁸⁸¹ Like behavioural remedies, they must be ‘at least equivalent’ to divestiture by completely eliminating the competition concerns raised by the Commission.⁸⁸²

3. Non-Compliance

If the parties fail to comply with a remedy attached to the European Commission’s decision, the latter can revoke the clearance of the concentration.⁸⁸³ In such situations, the parties may additionally be subject to interim measures appropriate to either restore the conditions pre-merger or maintain competitive conditions.⁸⁸⁴ According to Art. 14 (2)(d) EUMR, the Commission may also impose fines on the merging firms.

4. Application to Killer Acquisitions

Having established the theory, the question arises as to what remedies could be offered by merging parties whose transaction is qualified as a killer acquisition by the Commission.

As established above, the most effective remedy would be divestiture.⁸⁸⁵ Whilst the effectiveness of entirely eliminating competition concerns would need to be elaborated on a case-by-case basis, a general problem in such cases could be that it may be highly challenging for the Commission to estimate, at the moment of the transaction, the acquisition’s long-term effects on competition, i.e., whether the divested part also constitutes the part that will eventually raise competition concerns. Accordingly, even if a structural remedy is proposed, it may be uncertain that it will be effective in eliminating any competition concerns in the long term.

When looking at behavioural and access remedies, it is questionable whether they (i) suffice to entirely remove any competition concerns and (ii) can be implemented in a short time without requiring medium or long-term monitoring. In the context of killer acquisitions, these conditions may be difficult for the parties to meet. This is because the main competition concerns arise from the fact that (i) they allow the incumbent to further strengthen its market po-

⁸⁸¹ OECD, 20.

⁸⁸² EC, Remedies Notice, para. 61.

⁸⁸³ This applies to Phase I and Phase II decisions, see Art. 6(3) EUMR and Art. 8(3)(b) EUMR.

⁸⁸⁴ Art. 8(5)(b) EUMR.

⁸⁸⁵ [Part III: Chapter I: D. 2.1.](#)

sition in the long run and (ii) lead to the loss of potentially important future innovation. Although the former could be eliminated, for instance, by a commitment of licensing and/or guaranteeing interoperability, which would allow third parties to further use and access the technology, the second concern may hardly ever be met by these commitments. Such concerns could, for instance, be addressed by requiring the merging parties to keep the innovation project concerned alive. However, the effectivity of such a remedy would generally require medium-term to long-term monitoring measures, which, considering the conditions stipulated in the Remedies Notice,⁸⁸⁶ would probably not be accepted. A layer of complexity is added in cases where the competition and innovation concerns primarily arise from the fact that the incumbent may influence the start-up's innovation direction in a way that may lead to a potential loss of disruption. This is because, in such cases, it is almost impossible to monitor remedies, even if the parties guarantee the 'genuine' continuance of the innovation's development. Not to mention that the effectivity of such a remedy would require long-term monitoring measures since, as found in Part II, disruption may need time to ripen.⁸⁸⁷ Based on these findings, in killer acquisition cases, it may generally be very difficult for the parties to offer sufficiently convincing commitments that are able to fully meet the conditions posed by the Commission.

This also reflects in the recent *Illumina/Grail* case⁸⁸⁸: Illumina offered several remedies, including a licence to NGS suppliers to some of Illumina's NGS patents and the commitment to stop patent lawsuits both in Europe and the US against the NGS supplier BGI Genomics⁸⁸⁹ for three years. These remedies were intended to reduce IP-related barriers to entry. However, the Commission considered the proposed remedies to be inapt to ensure the emergence of a credible alternative to Illumina in the short to medium term. It further found that Illumina's commitment to supply Grail's competitors under standard conditions until 2033 was insufficient, as such conditions would be easy to circumvent and difficult to monitor.⁸⁹⁰ Moreover, it argued that the fact that

⁸⁸⁶ [Part III: Chapter 1: D. 1.](#)

⁸⁸⁷ [Part II: Chapter 2: D. 2.](#)

⁸⁸⁸ For more information on the case, see [Part III: Chapter 1: C. 5.3.](#)

⁸⁸⁹ BGI Genomics is the world's leading integrated solutions provider of precision medicine. For more information, see <<https://www.bgi.com/global/company/about-bgi>> accessed 27 December 2023.

⁸⁹⁰ Note, however, that in the past, such remedies have been accepted by the Commission, showing the more severe stand the Commission has taken in this case. See, for instance, Case COMP/M.8665 – *Discovery/Scripps*, where the Commission raised concerns regard-

Illumina's patents were about to expire in the short term was not enough to eliminate competition concerns. This is because the acquirer still has other patents that would require rivals to develop an alternative NGS system. It also stressed that even if alternative NGS systems were developed, switching the provider would be a long and costly process without a guarantee of success.⁸⁹¹ Hence, it overall considered the commitments suggested by the parties inapt to eliminate competition concerns entirely, which led to the prohibition of the transaction. It remains to be seen how the General Court will consider the Commission's analysis.

E. Interim Summary

This chapter sought to give the reader an in-depth overview of the current EUMR whilst showing its limits in the assessment of killer acquisitions. To this end, it individually analysed jurisdictional, procedural and substantive questions and considered the current remedies framework.

With regard to jurisdictional questions, this chapter found that the current turnover thresholds cannot effectively spot potential harmful nascent acquisitions in digital markets. This is because start-ups often focus on the growth of their user base, which they usually only monetise at a later stage after exiting either via an IPO or an acquisition. Accordingly, their turnover often does not represent the competitive threat they may pose to the incumbent's position one day, which increases the likelihood that such transactions escape scrutiny despite their potential to harm competition and innovation.

This loophole was also recognised by the European Commission, whereupon it chose to tackle the enforcement gap through its procedural pillar by introducing a new Guidance on Art. 22 EUMR in 2021. Essentially, the practice amendments of Art. 22 EUMR significantly expand the current EU jurisdiction by empowering the Commission to investigate virtually any transaction, irrespective of whether the value of the acquisition, the turnover and the market share of the parties meet the conditions stipulated by national merger control rules or the EUMR. Overall, the new practice is highly welcome and seems to be a step in the right direction to better spot potentially harmful nascent transactions.

ing Scripp's bargaining power, which was eventually eliminated by a commitment to supply its services at a reasonable fee for seven years.

⁸⁹¹ EC, 'Mergers: Commission prohibits acquisition of GRAIL by Illumina' (EC Press Release, 6 September 2022) <https://ec.europa.eu/commission/presscorner/detail/en/ip_22_5364> accessed 27 December 2023.

Regarding the substantial analysis, the following challenges were identified in relation to killer acquisitions:

- High standards of proof;
- Market definition relying on the concept of substitutability;
- Distinction between horizontal and non-horizontal transactions;
- Difficulties in spotting the harm under existing theories of harm;
- High requirement for accepting remedies.

All these points have in common that they struggle with the uncertainty that the assessment of killer acquisitions entails, i.e., with the fact that start-ups' uncertain development generally requires a look into the distant future. This makes, for instance, the finding of convincing evidence difficult as the Commission may sometimes simply not know how the innovation in question may develop in the absence of the transaction. Similar challenges may also be faced when it comes to the assessment of the market definition and the classification of killer acquisitions as horizontal non-horizontal transactions. Moreover, with regard to existing theories of harm, it is striking that the high standards of proof required to find the loss of potential competitors realistic may often not be met in killer acquisitions, given that the start-up's full potential usually has yet to unfold fully. Consequently, the merging parties may not exhibit the closeness required to be considered potential competitors. Similarly, the loss of innovation competition theory of harm developed in the case law may also insufficiently recognise harms caused by killer acquisitions as it is strongly outcome-focused and insufficiently considers the effects that the transaction may have on the innovation direction and diversity. When looking at non-horizontal transactions, it is striking that much emphasis is put on foreclosure effects. Although, depending on the facts, the assessment of foreclosure effects is important in killer acquisition cases, the mere analysis of such effects may lead to an underestimation of the potential harm. This also reflects in the contrasting stands taken by the EU and the US in the *Illumina/Grail* case.

By injecting horizontal aspects into the vertical analysis and considering a longer time frame, the European Commission found the transaction to raise major competition concerns. In contrast, the US Federal Trade Commission stuck to a more conventional approach of assessing competitive harm in non-horizontal transactions, which eventually led it to approve the transaction. Although the approach taken by the European Commission is highly welcome, it is questionable whether it would also be applicable to killer acquisitions in dig-

ital markets where innovation is generally less well-structured and thus even less predictable than in the pharmaceutical sector. The answer to this question largely depends on whether the General Court will consider the evidence submitted by the European Commission sufficiently robust and how it will decide regarding the imminence of potential future competition.

Finally, it should be noted that in killer acquisition cases, it may generally be difficult for the parties to offer remedies that can entirely remove anti-competitive effects. This is largely owed to the fact that offering commitments that guarantee the elimination of all anti-competitive concerns without requiring medium or long-term monitoring is very difficult. A layer of complexity is added to cases that raise concerns about the loss of disruption, as even if monitored, it is almost impossible to make sure that the incumbent does not influence the innovation in a way that favours itself the most but not necessarily the development of the innovation.

Chapter 2: Legal Analysis of the DMA

Having established the challenges that the assessment of killer acquisitions poses to the current EUMR, the remit of this chapter is to analyse whether the recently enacted Digital Markets Act (DMA), which specifically addresses gatekeepers in digital markets, could contribute to tackling such transactions. Hence, this chapter will assess the DMA in light of killer acquisitions. To this end, it will first introduce the DMA, which is followed by a more succinct explanation of the Regulation's scope of application. Thereafter, this chapter will look at the obligations and sanctions it imposes on gatekeepers. Based on these observations, it will eventually analyse to what extent the DMA could alleviate the challenges posed by killer acquisitions.

A. Introduction to the DMA

With the adoption of the DMA in 2022, the European Commission has introduced an ad hoc regulatory regime that aims to scrutinise ex-ante the power of gatekeepers in order to ensure contestable and fair markets in the digital sector.⁸⁹² Given that the DMA could play an important role in the context of killer acquisitions, as gatekeepers have a strategic interest in buying potential future threats, the following sections will introduce the Regulation in more detail.

1. Reasons for the Enactment of the DMA

The emergence of a few very large technology companies has fundamentally redefined how society works.⁸⁹³ In fact, by touching virtually everything in today's society, certain companies have become omnipresent forces—a phenomenon Fernandez et al. refer to as the 'Big Technification of Everything'.⁸⁹⁴ As

⁸⁹² Recital 11 DMA; Caffarra Christina and Morton Fiona Scott, 'The European Commission Digital Markets Act: A translation' (VOXEU, 5 January 2021) <<https://cepr.org/voxeu/columns/european-commission-digital-markets-act-translation>> accessed 27 December 2023.

⁸⁹³ Vestager Margrethe, 'Conference on Competition and the Digital Economy' (OECD/G7 Conference, Paris, June 2019); see also Muldoon, 11–12.

⁸⁹⁴ Fernandez Rodrigo, Klinge Tobias J., Hendrikse Reijer and Adriaans Ilke, 'How Big Tech Is Becoming the Government' (Tribune, 5 February 2021) <<https://tribunemag.co.uk/2021/02/how-big-tech-became-the-government>> accessed 27 December 2023.

a result, it has become almost impossible for consumers to escape their grid of intertwined products and services, ranging from online shopping to entertainment streaming and transportation to domestic services.⁸⁹⁵ This is, for instance, also evidenced by the fact that (i) more than 90% use Google's search engine in Europe,⁸⁹⁶ (ii) approximately 3.96 billion people actively use either Facebook, WhatsApp, Instagram or Messenger every month⁸⁹⁷ and (iii) Amazon, once a low-technology book retailer, now accounts for approximately 14% of worldwide retail e-commerce sales.⁸⁹⁸ Accordingly, if Microsoft were to be viewed as the dominant company raising competitive concerns in the 1990s, it would have now been joined by many others. Sitting astride key sectors of today's economy, namely online retail, smartphones, social media, internet search and so forth, large companies such as GAFAM have become powerful drivers of growth for the global economy.⁸⁹⁹ They act as important gateways for business users to reach end users, giving them the power to impose unfair conditions. Hence, in an attempt to alleviate these challenges, the European Commission enacted the DMA in November 2022, which, as the name implies, addresses gatekeepers in digital markets. It started applying in May 2023.⁹⁰⁰

2. Purpose

In a nutshell, the DMA primarily targets large platforms, which hold a strategic position and function as so-called 'bottlenecks' between businesses and customers. Thereby, the core of the DMA's protection lies with what has nicely

⁸⁹⁵ Herndon Astead W., 'Elizabeth Warren Proposes Breaking Up Tech Giants Like Amazon and Facebook' (*The New York Times*, 8 March 2019) <<https://www.nytimes.com/2019/03/08/us/politics/elizabeth-warren-amazon.html>> accessed 27 December 2023; see also See, for instance, Hill Kashmir, 'I Tried to Live without the Tech Giants. It was Impossible' (*The New York Times*, 31 July 2020) <<https://www.nytimes.com/2020/07/31/technology/blocking-the-tech-giants.html>> accessed 27 December 2023.

⁸⁹⁶ Statcounter, 'Search Engine Market Share Europe: Dec 2022 – Dec 2023' (statcounter, 2023) <<https://gs.statcounter.com/search-engine-market-share/all/europe>> accessed 27 December 2023.

⁸⁹⁷ Dixon S., 'Cumulative number of monthly Meta product users as of 3rd quarter 2023' (Statista, 9 November 2023) <<https://www.statista.com/statistics/947869/facebook-product-mau/>> accessed 27 December 2023.

⁸⁹⁸ Chevalier Stephanie, 'Global retail e-commerce market share of Amazon from 2016 to 2019' (Statista, 16 February 2023) <<https://www.statista.com/statistics/955796/global-amazon-e-commerce-market-share/#:~:text=This statistic presents the global,worldwide retail e-commerce sales,>> accessed 27 December 2023.

⁸⁹⁹ Kwoka, 17 et seq.

⁹⁰⁰ See Art. 54 DMA, stating that the DMA shall apply from 6 months after its entry into force.

been described by Lügig and Schley as ‘market openness’.⁹⁰¹ This is specified in Recital 11 DMA, according to which the DMA aims “to ensure that markets where gatekeepers are present are and remain contestable and fair, independently from the actual, potential or presumed effects of the conduct of a given gatekeeper covered by this Regulation on competition on a given market.”⁹⁰² Accordingly, unlike the EUMR, which puts more emphasis on efficiency,⁹⁰³ the overarching aim of the DMA is to guarantee contestable and fair digital markets. The Commission specifies that contestability refers to “the ability of undertakings to effectively overcome barriers to entry and expansion and challenge the gatekeeper on the merits of their products and services.”⁹⁰⁴ In contrast, the Commission considers a practice to be unfair if it allows gatekeepers to obtain a disproportionate advantage. In short, the DMA aims to ensure that all market players “have the ability to adequately capture the benefits resulting from their innovative or other efforts.”⁹⁰⁵

It should be added that according to Recital 34 DMA, contestability and fairness are intertwined. This means that where a market is not or only weakly contestable, it may allow the gatekeeper to engage in unfair practices. Conversely, where a gatekeeper engages in unfair practices, the possibility of business users or others contesting the gatekeeper’s position is reduced. Accordingly, both elements need to be protected in order to secure the DMA’s purpose.⁹⁰⁶

3. Relationship to Competition Law

By ensuring contestable and fair markets, the underlying regulatory objective taken in the DMA is very close to competition law and is strongly reminiscent of the values incarnated by the Ordoliberal school of thought.⁹⁰⁷ However, rather than substituting existing rules, the DMA merely seeks to cover certain gaps identified by the European Commission in the existing legal toolbox. Put differently, the DMA does not represent an expansion of competition law but

⁹⁰¹ Lübbig Thomas and Schley Ole, ‘Doppelte Beschörung: Zu DMA und GWB 10’ (D’Kart, 21 December 2020) <<https://www.d-kart.de/blog/2020/12/21/doppelte-beschörung-zu-dma-und-gwb10/>> accessed 27 December 2023.

⁹⁰² Recital 11 DMA.

⁹⁰³ See [Part I: Chapter 3: C. 3.1.c](#).

⁹⁰⁴ Recital 32 DMA.

⁹⁰⁵ Recital 33 DMA.

⁹⁰⁶ Recital 34 DMA.

⁹⁰⁷ The values of the Ordoliberal school of thought were discussed in [Part I: Chapter 3: C. 3.1.a](#).

aims at the realisation of the single digital market by addressing issues that the current competition fails to tackle.⁹⁰⁸ This also reflects in the legal basis of the DMA: by relying on Art. 114 TFEU, which regulates the internal market competence—and not on Art. 103 TFEU, which gives the Commission powers to enforce the competition rules—⁹⁰⁹ the European Commission stresses the complementary nature of the DMA to antitrust intervention in the digital sector.⁹¹⁰

B. Scope of Application

The difference between the DMA and more traditional competition law also reflects in the fact that it is based on a targeted approach.⁹¹¹ This means that the DMA only applies to designated gatekeepers. Thereby the term ‘gatekeeper’ encapsulates any provider of core platform services which are listed in Art. 2(2) DMA and that meet the criteria of Art. 3 DMA. This subchapter aims to analyse these conditions individually.

1. Definition of the Term ‘Gatekeeper’

According to Art. 2(1) DMA gatekeepers refer to ‘core platform services’. Instead of providing a definition, Art. 2(2) DMA contains an exhaustive list, including online intermediation services, online search engines, online social networking services and so forth, which are all defined in the following paragraphs of the same article with reference to existing legislation. Although the DMA refers to a large range of different platforms, it does not encompass any platform meeting one of the criteria listed in Art. 2(2) DMA but only those that

⁹⁰⁸ Heinemann and Meier, 88. For more information on the legal basis, see the Legal Opinion concerning Art. 114 TFEU.

⁹⁰⁹ According to Art. 103(1), Art. 103 TFEU is the legal basis for “regulations or directives to give effect to the principles set out in Articles 101 and 102 [TFEU]”.

⁹¹⁰ Caffarra Christina and Morton Fiona Scott, ‘The European Commission Digital Markets Act: A translation’ (VOXEU, 5 January 2021) <<https://cepr.org/voxeu/columns/european-commission-digital-markets-act-translation>> accessed 27 December 2023.

⁹¹¹ Note that the introduction of a targeted approach has been widely discussed in the literature. For instance, the Furman Report recommended that certain designated digital firms with a strategic market position should be obliged to make the competition agency aware of all intended transactions regardless of their size, see Furman Report, 12. Similarly, in Australia, the ACCC Digital Platforms Inquiry also noticed that large incumbents should be required to provide a notification in advance, see ACCC Report, 104–106.

have a certain size. Presumably, this is because the administrative burden for the European Commission and National Competition Authorities would be too high otherwise.

2. Requirements

Art. 3(1) DMA specifies that the DMA only applies to platforms that have: (i) a strong economic position, significant impact on the internal market and are active in multiple EU countries, (ii) a strong intermediation position, which presupposes that they connect a large user base to a large number of businesses and thus serve as an important gateway and (iii) an entrenched and durable position in the market, or are about to have such a position. For each of these requirements, the DMA establishes presumptions that can be found in Art. 3(2) DMA.

Art. 3(2)(a) DMA assumes that a platform has a significant impact on the internal market if the undertaking to which it belongs has had an annual EEA turnover of at least €7.5 billion in each of the last three years or an average market capitalisation or the equivalent fair market value of at least €75 billion in the last financial year and is providing a core platform service in at least three Member States. Moreover, a platform only acts as an important gateway if it has more than 45 million monthly active end-users established or is located in the EU and has at least 10,000 annual active users established in the EU in the last financial year.⁹¹² Art. 3(2)(c) DMA further stipulates that these thresholds must be met in each of the last three financial years in order for the gatekeeper to be found to hold an entrenched and durable position.⁹¹³

If a platform meets all of the above-mentioned requirements and, consequently, qualifies as a gatekeeper, it shall notify the Commission within two months and provide it with the relevant information.⁹¹⁴ According to Art. 3(4) DMA, the Commission shall designate the platform as a gatekeeper at the latest 45 days after receipt of the notification. It is up to the Commission to constantly reassess companies' position as gatekeepers.⁹¹⁵

⁹¹² Art. 3(2)(b) DMA. Note that in Annex B para. 2 DMA, the Commission defines monthly active end users as “the average number of monthly active end users throughout the largest part of the financial year.”

⁹¹³ Art. 3(2)(c) DMA.

⁹¹⁴ Art. 3(3) DMA.

⁹¹⁵ Art. 4 DMA.

It should be added that, in cases the Commission finds a company to be a gatekeeper, it does not have to define the relevant market and prove that the gatekeeper concerned holds a dominant position or that certain conduct causes anti-competitive effects. Moreover, under the DMA, no efficiency defences are accepted.⁹¹⁶ Instead, the DMA imposes duties on gatekeepers that they have to comply with, irrespective of the effects these behaviours would have on competition in each individual case.

C. Obligations under the DMA

If the Commission concludes that the platform in question operates as a gatekeeper according to Art. 2(2) DMA, in conjunction with 3(1) DMA, the company concerned needs to “list in the designation decision the relevant core platform services that are provided within that undertaking and which individually are an important gateway for business users to reach end users”.⁹¹⁷ From this date, the gatekeeper has six months to comply with the obligations laid down in Art. 5, 6 and 7 DMA.⁹¹⁸ They include any behaviour that could limit contestability or are unfair,⁹¹⁹ thereby ensuring that gatekeepers stay interoperable and do not engage in any other exclusionary conducts that could allow them to further entrench their position.⁹²⁰ In general, it is striking that the obligations heavily rely on recent case law.⁹²¹ For instance, this becomes apparent when looking at the prohibition of gatekeepers treating their own products or services “more favourably, in ranking and related indexing and crawling [...] than similar services or products of a third party”⁹²², which is strongly reminiscent of the *Google Search (Shopping)* case.⁹²³

In addition to the duties of conduct, and more importantly in the context of killer acquisitions, Art. 14(1) DMA imposes a duty on gatekeepers to report “any intended concentration within the meaning of Article 3 of Regulation (EC) No 139/2004, where the merging entities or the target of concentration

⁹¹⁶ Komninos Assimakis, ‘The Digital Markets Act (DMA) goes live’ (*White & Case*, 12 October 2022) <<https://www.whitecase.com/>> accessed 27 December 2023.

⁹¹⁷ Art. 3(9) DMA.

⁹¹⁸ Art. 3(8) DMA.

⁹¹⁹ For more information, see Art. 5, 6 and 7 DMA.

⁹²⁰ This was also discussed above, see [Part I: Chapter 2: B. 2.](#)

⁹²¹ Komninos Assimakis, ‘The Digital Markets Act (DMA) goes live’ (*White & Case*, 12 October 2022) <<https://www.whitecase.com/>> accessed 27 December 2023.

⁹²² Art. 6(5) DMA.

⁹²³ See Case AT. 39740 – *Google Search (Shopping)*.

provide core platform services or any other services in the digital sector or enable the collection of data, irrespective of whether it is notifiable to the Commission under that Regulation or to a competent national competition authority under national merger rules.”⁹²⁴ The Commission shall be informed of such a concentration prior to its implementation and following the conclusion of the agreement.⁹²⁵ This applies irrespective of whether or not the thresholds of merger control regulations on the EU or national level are met. The notification shall include information about the undertakings involved in the concentration, their Union and worldwide annual turnovers. Moreover, the gatekeeper needs to provide information on their fields of activity, including activities directly related to the concentration and the transaction value.⁹²⁶ Art. 14(2) DMA also requires the merging parties to disclose the rationale of the intended concentration,⁹²⁷ which clearly shows the Commission’s objective to ascertain whether the acquirer has anti-competitive intentions, such as pre-empting a potential future competitor or taming a potentially disruptive technology. Additionally, the notifying parties need to provide a list of the Member States concerned by the transaction.⁹²⁸ This is closely related to Art. 14(4) DMA, which requires the Commission to inform the competent authorities of the Member States of any information received with the notification according to Art. 14(1) DMA.

D. Sanctions

If designated gatekeepers do not comply with the obligations foreseen in the DMA, they are exposed to fines of up to 10% of global turnover.⁹²⁹ In case gatekeepers try to circumvent or systematically non-comply with the DMA, i.e., if the Commission finds the gatekeeper to non-comply at least three times within eight years, fines can be increased to up to 20% of global turnover.⁹³⁰ The Commission can also impose behavioural or structural remedies, including a ban on M&A. It may even go as far as breaking up existing groups.⁹³¹

⁹²⁴ Art. 14(1) DMA.

⁹²⁵ *ibid.*

⁹²⁶ Art. 14(2) DMA.

⁹²⁷ *ibid.*

⁹²⁸ *ibid.*

⁹²⁹ Art. 30(1) DMA.

⁹³⁰ Art. 30(2) DMA.

⁹³¹ Art. 18 DMA.

E. Application to Killer Acquisitions

In general, the DMA is highly welcome and gives the European Commission the possibility to conduct a market investigation ex-ante, thereby allowing it to better grasp the dynamics between gatekeepers and the digital economy.⁹³² This also applies in terms of enforcement as, with regard to the duties foreseen in Art. 5, 6 and 7 DMA, the Regulation does not require the Commission to conduct a market definition or assess the merging companies' market position. It merely relies on the question of whether or not a company qualifies as a gatekeeper. In light of digital markets, this is particularly welcome since, as explained above, defining markets⁹³³ and assessing the merging parties' market position by means of traditional tools⁹³⁴ can prove extremely difficult.

By imposing the duty on gatekeepers to inform the European Commission about any intended transaction pre-implementation, Art. 14 DMA complements Art. 22 EUMR. After all, as stated above, Art. 22 EUMR allows the Commission to inform any Member States about notified mergers, whereupon they can make a referral to the Commission under Art. 22 EUMR.⁹³⁵ The DMA, therefore, appears to be another attempt to tackle the challenges posed by the judicial requirements. In addition, the notification obligation imposed on gatekeepers also contributes to improving the monitoring of broader contestability trends in the digital sector, which is highly important to draw a clearer picture of large platforms' acquisition strategies and their intention for the future.

It should be noted, however, that although the DMA responds to a call for regulation in the digital sector and is undoubtedly a step in the right direction, without amendments to the EUMR, which will be discussed in the following Part, it is unlikely that by merely relying on the DMA current challenges posed by killer acquisitions in digital markets can be tackled. After all, as of now, the DMA only addresses the challenge of spotting potentially harmful transactions but does not solve the problems that arise on a substantial level.⁹³⁶

⁹³² See Art. 16 DMA et seq.

⁹³³ See [Part III: Chapter 1: C. 1.2.](#)

⁹³⁴ See [Part III: Chapter 1: C. 5.1.a\(cc\).](#)

⁹³⁵ [Part III: Chapter 1: B. 2.](#)

⁹³⁶ Caffarra Christina and Morton Fiona Scott, 'The European Commission Digital Markets Act: A translation' (VOXEU, 5 January 2021) <<https://cepr.org/voxeu/columns/european-commission-digital-markets-act-translation>> accessed 27 December 2023.

F. Interim Summary

This chapter aimed to shed light on the DMA and show how it could potentially contribute to the fight against killer acquisitions. To this end, it introduced the reader to the recently enacted Regulation. Among other things, it highlighted its complementary nature to competition law by imposing behavioural obligations on gatekeepers that aim to guarantee contestable and fair markets in the long run. In this connection, it discussed gatekeepers' obligation to inform the Commission about any mergers planned pre-implementation. Thereby, this obligation does not require the meeting of any thresholds—an aspect that, due to nascent firms' low or non-existent market shares, is highly valuable in killer acquisition cases.⁹³⁷ By circumventing the EUMR's high turnover thresholds, which, in relation to killer acquisitions, were criticised in [chapter 1 of this Part](#), the DMA complements Art. 22 EUMR. Even though this measure undoubtedly constitutes a step in the right direction, this chapter also showed that, without any additional obligations in the DMA or changes in the substantial analysis of the EUMR, the current approach alone may not be sufficient to effectively tackle killer acquisitions.

⁹³⁷ See [Part III: Chapter 1: B. 2.2.](#)

Summary

Traditionally, the role and relevance of nascent companies in merger control have been limited to their role as a new entrant, signalling low barriers to entry and sometimes even showing tendencies of an increasingly competitive market. Accordingly, they were generally not considered merging parties, the presence of which in transactions may eventually lead to a more concentrated market and could potentially decrease contestability.⁹³⁸ With the growing awareness of killer acquisitions, this view started changing over the past few years. Most notably, this reflects in the European Commission's recently introduced new practice of Art. 22 EUMR, which allows Member States to refer suspicious transactions to the European Commission irrespective of their turnover. Whilst this attempt to close the enforcement gap undoubtedly constitutes a step in the right direction to better spot such transactions in the future, without a change of the substantial analysis foreseen in the current EUMR, this measure alone may not suffice to effectively tackle such cases in the long term.

This applies despite the recently enacted DMA, which aims to create a more even playing field for all market actors, thereby tackling the power that gatekeepers hold in the digital sector. Although the obligation of gatekeepers to inform the European Commission about any intended transaction effectively complements the new practice of Art. 22 EUMR and is therefore highly welcome,⁹³⁹ the DMA does not address the challenges that killer acquisitions pose on a substantial level. This still needs to be done through the EUMR. Hence, Part IV will need to determine how the European Commission could either stretch the existing merger control framework or design a new framework in order to more effectively ascertain the harm that may emanate from such transactions. A reconsideration will also need to be done regarding the current high standards of proof required by the European Courts, which may virtually never be met in killer acquisition cases occurring in digital markets.

⁹³⁸ OECD (2020a), 5.

⁹³⁹ Art. 14 DMA.

Part IV:

Policy Debate

Chapter 1: Possible Amendments to the EUMR

The previous Part has demonstrated that although the Commission's efforts to bring the EUMR up to date are going in the right direction, the current legal toolbox is still not apt to effectively assess harm emanating from killer acquisitions. Hence, this chapter aims to ascertain possible amendments to the EUMR in order to better tackle such transactions in the future. To this end, it will embark on a full-fledged policy discussion, thereby analysing different avenues on how the EUMR could be reformed. The overarching aim of this chapter is to provide the European Commission with guidance on how the current merger control regime could be improved to more effectively tackle killer acquisitions in digital markets in the future.

To ensure coherency with the previous Part, this chapter will roughly follow the same structure as taken in [chapter 1 of Part III](#). First, it will look at jurisdictional questions, which will be followed by an analysis of potential improvements of procedural aspects. Thereafter, it will discuss possible changes to the substantial analysis. Finally, this chapter will assess how the current remedies framework could be rendered more effective in the fight against killer acquisitions.

A. Jurisdictional Questions

The analysis of the EUMR in chapter 1 of Part III has revealed that the current high turnover thresholds pose major challenges to catching killer acquisitions. Given that the European Commission chose to close this enforcement gap through its new Guidance on Art. 22 EUMR in connection with Art. 14 DMA⁹⁴⁰—and not by amending the jurisdictional requirements—the question arises as to whether alternative solutions could have been just as or even more effective. For this reason, this subchapter seeks to elaborate on alternate avenues that the Commission could have taken, thereby discussing their effectiveness compared to Art. 22 EUMR. To this end, it will consider both ex-ante and ex-post approaches.

⁹⁴⁰ For more information, see [Part III: Chapter 1: B. 2](#) and [Part III: Chapter 2: C](#).

1. **Alternative Ex-Ante Approaches to Art. 22 EUMR**

This section will first assess possible alternative ex-ante avenues to Art. 22 EUMR.

1.1. **Abolishing Turnover Thresholds**

As established in Part III, the new practice of Art. 22 EUMR allows the Commission to review virtually any transaction that is subject to a referral request by at least one Member State, irrespective of their turnover.⁹⁴¹ In turn, this raises the question of why the turnover thresholds have not been completely abolished by the European Council.

The answer to this question is rather straightforward: compared to Art. 22 EUMR, which requires the Member States first to assess whether harm may potentially be present, a completely unfiltered approach like the abolishment of the existing thresholds would have increased the European Commission's expenditure of its already scarce resources. In fact, it would have required the Commission to assess the competitive relevance of virtually any transaction in any sector, easily amounting to hundreds of investigations per year.⁹⁴² Therefore, the more targeted approach through Art. 22 EUMR combined with Art. 14 DMA constitutes a more effective compromise regarding killer acquisitions in digital markets.

1.2. **Reducing Turnover Thresholds**

Alternatively, the Commission could have reduced the existing turnover thresholds foreseen in Art. 1 EUMR. Whilst such an approach may indeed have contributed to better catching acquisitions of nascent companies with no or low turnover, thereby allowing the European Commission to extend its authority, it would most likely not have guaranteed that the 'right' transactions had been caught, i.e., those that actually raise anti-competitive concerns in digital markets. Hence, compared to Art. 22 EUMR, which provides the Member States with guidance on the categories of transactions that are welcome

⁹⁴¹ [Part III: Chapter 1: B. 2.2.](#)

⁹⁴² Note, however, that the European Commission has a certain degree of discretion as to which acquisitions it wishes to scrutinise. It can be assumed that such a measure would nevertheless increase its workload as it would have to distinguish the relevant cases from those that are irrelevant.

under this article,⁹⁴³ the alternative of reducing the turnover thresholds would have been less conclusive.⁹⁴⁴

1.3. Value-Based Approach

Another approach that has been widely discussed in the literature, as well as by various competition authorities, is the introduction of a supplementary value-based threshold. The value-based approach is based on the idea that the price an incumbent is willing to pay for an emerging company can be a crucial indicator of its potential competitiveness.⁹⁴⁵

In 2017, both Germany and Austria pioneered this approach by implementing additional value-based thresholds. Whilst Germany complemented its existing thresholds⁹⁴⁶ with a value-based threshold according to which the provision on the control of concentrations shall also apply if transactions exceed the value of €400 million, Austria chose a lower value-based threshold that allows intervention if a merger exceeds €200 million.⁹⁴⁷ Accordingly, if a transaction involves a company with 'significant' activities in one of these jurisdictions, acquisitions meeting these value-based thresholds need to be notified to the competition authority concerned.

Even though the introduction of a value-based threshold seems, in principle, like a practical alternative screening instrument for transactions with a low turnover,⁹⁴⁸ it has so far only been proven to have limited effectiveness. As noted by Bourreau and de Streel, the experiences of the pioneers of the value-based threshold have shown that, in many cases, the merger transaction value

⁹⁴³ [See Part III: Chapter 1: B. 2.3](#)

⁹⁴⁴ See others that came to the same conclusion that reducing the thresholds would not be conclusive: Apel and Polley, 306; Bourreau and de Streel (2019), 32; EC Report, 113; Holmström et al., 12 et seq.; Levy, Mostyn and Buzata, 57–58. More generally, see also Bundeskartellamt Hintergrundpapier, 13.

⁹⁴⁵ Valletti Tommaso, 'CRA Annual Brussels Conference: Economic Developments in Competition Policy' (CRA Conference, 5 December 2018).

⁹⁴⁶ According to §35(1) of the German Competition Act (GWB), under the turnover-based thresholds, a transaction is caught if (i) the merging parties have a combined worldwide turnover of more than € 500 million, (ii) at least one party has a domestic turnover of more than € 50 million, and (iii) that another undertaking concerned has a domestic turnover of more than € 17.5 million.

⁹⁴⁷ See §38(4a) of German Competition Act (GWB) and the explanatory notes regarding §9(4) to the Austrian Competition Law.

⁹⁴⁸ See proponents of this idea, Lear Report, 45; Motta and Peitz, 13; Podszun (2020), 83; CMA, Advice of the Digital Markets Taskforce, 60.

is congruent with the merging companies' monetary turnover.⁹⁴⁹ The evaluation of procedural and jurisdictional aspects of the EUMR led by the Commission has further revealed that introducing a value-based threshold would most likely not constitute the most effective solution because the transaction value does not always correlate sufficiently with the potential competitive significance of a proposed concentration.⁹⁵⁰ Put differently, it is questionable whether the turnover threshold may screen the 'right' transactions in terms of their harmfulness.⁹⁵¹

Against this background, the Commission has decided against the adoption of such an approach. In fact, Commissioner Vestager found that, on the one hand, in cases where the value-based threshold is set too high, harmful transactions may still fly under the radar. On the other hand, if the value-based thresholds are set too low, such transactions are caught, yet there is a substantial risk of making firms file a lot of cases that are not necessarily relevant to the European Commission. She, therefore, concluded that "right now, changing the merger regulation, to add a new threshold like this, doesn't seem like the most proportionate solution."⁹⁵² Indeed, designing a value-based threshold that strikes the right balance between overenforcement and underenforcement is very challenging, particularly due to the very limited cases the European Commission has scrutinised in the digital sector over the past decade and, consequently, the limited empirical evidence available in this regard. Accordingly, it seems that the Commission has rightfully chosen to refrain from such an approach. At the same time, it also noted that "it may be still too early to draw firm conclusions" and did not yet completely shelve the idea in the long term.⁹⁵³ In fact, its willingness to include elements of a value-based threshold is reflected in the Guidance on Art. 22 EUMR, where the Commission states that it may compare the offered purchase price for the target company to its current turnover.⁹⁵⁴ Instead of introducing a clear threshold, it,

⁹⁴⁹ Bourreau and de Stree, 15.

⁹⁵⁰ SWD, Procedural and Jurisdictional Aspects, para. 266.

⁹⁵¹ The same conclusion was drawn by Levy, Mostyn and Buzata, 59; Turgot, 118; Apel and Polley, 308–309; EC Report, 115–116; Bundeskartellamt Hintergrundpapier, 13–14.

⁹⁵² Vestager Margrethe, 'The future of EU merger control' (The International Bar Association 24th Annual Competition Conference, 11 September 2020).

⁹⁵³ SWD, Procedural and Jurisdictional Aspects, para. 123. See also para. 136, where the Commission notes that "while it may be too early to draw conclusions, the enforcement experience of the German and Austrian merger control jurisdictions seems to suggest that so far the new transaction value thresholds have not captured additional anticompetitive transactions and appear to have captured few transactions concerning the digital sector in particular."

⁹⁵⁴ EC, Guidance on Art. 22 EUMR, para. 19.

therefore, chose to introduce a similar alternative through the backdoor of Art. 22 EUMR,⁹⁵⁵ which, considering the observations made by Vestager, seems a good compromise and allows the Commission to gather more information as to what value-threshold may be optimal in the fight against killer acquisitions in the future.

1.4. Share-Based Approach

By providing an additional threshold that allows the competition authorities to consider the market shares of the companies concerned, the introduction of a share-based test may offer another alternative to tackle the challenges posed by killer acquisitions. Some European jurisdictions like the UK or Spain have already implemented such an approach. For instance, in the UK, the Share of Supply Test encourages the Competition and Markets Authority to assess transactions if the parties involved have a share of supply that exceeds 25% and the transaction leads to an increase of that share.⁹⁵⁶ In Spain, the Competition Act foresees that mergers resulting in a share equal to or greater than 30% of the relevant product or service market need to be notified.⁹⁵⁷ In turn, this ponders the question of whether the introduction of a share-based threshold similar to the UK or Spain may also benefit the European Commission in the fight against killer acquisitions in digital markets.

By bridging the gap between the turnover thresholds and cases where the notifying parties do not generate sufficient revenue to meet these thresholds, the share-based approach is particularly useful in cases where the companies exhibit horizontal overlaps. However, as pointed out by the UK Competition and Market Authority itself, it “fails to capture many transactions [...], which often involve moving into adjacent markets, because it cannot capture mergers where the relationship between the merging parties is purely vertical in nature.”⁹⁵⁸

In the literature, it has also been highlighted that the application of the share-based approach requires the notifying parties to define the relevant market already when examining the obligation to notify.⁹⁵⁹ Since, as described in Part II,

⁹⁵⁵ Friso Bostoen, “The Commission’s Article 22 EUMR Guidance: catching killer acquisitions through the merger referral procedure?” (*lexxion*, 19 April 2021) <<https://www.lexxion.eu/coreblogpost/article-22-referral-guidance/>> accessed 27 December 2023.

⁹⁵⁶ Section 23 of the UK Enterprise Act 2002.

⁹⁵⁷ Art. 8 of the Spanish Competition Act 15/2007 of 3rd July.

⁹⁵⁸ CMA, Advice of the Digital Markets Taskforce, 57.

⁹⁵⁹ These concerns were raised in the context of § 39a of the German Competition Act (GWB) by Becker, 390.

defining the market as well as the market shares can be highly complex in digital markets,⁹⁶⁰ such an approach would give rise to considerable legal uncertainty, and its effectivity may only be limited in the context of killer acquisitions in digital markets. In light of these findings, it can therefore be concluded that, at least in digital markets, this approach does not provide a more effective solution to the Commission's introduction of the new Guidance on Art. 22 EUMR.

2. Alternative Ex-Post Approaches to Art. 22 EUMR

Having found that no alternative ex-ante approach would have constituted a more effective solution than the introduction of the new practice of Art. 22 EUMR, the question arises of whether the introduction of an ex-post review could constitute a more useful complement to the existing turnover thresholds.

2.1. Ex-Post Review of the EUMR

The idea of introducing an ex-post review of merger control is not new. Jurisdictions such as Hungary, Ireland, Sweden, Lithuania, the UK, the US, Canada, Japan, Mexico and Brazil have already implemented such a mechanism, with their forms varying.⁹⁶¹ The EU, on the other hand, does not provide for such an approach which would allow the Commission to review its decision ex-post. Given that the assessment of killer acquisitions is associated with a lot of uncertainty, making it generally hard for competition authorities to predict future developments, the following subsections will consider whether the introduction of an ex-post review regime of merger control decisions may provide a more efficient solution to tackle the challenges posed by such cases.⁹⁶²

⁹⁶⁰ See [Part II: Chapter 2: B. 1](#) and [Part III: Chapter 1: C. 4.1.c](#).

⁹⁶¹ Autorité de la concurrence, 'Réforme du droit des concentrations et contrôle ex post' (Autorité de la concurrence, September 2018) <https://www.autoritedelaconcurrence.fr/sites/default/files/note_controle_expost.pdf> accessed 27 December 2023; see also Chantrel et al., 34. Note that France also contemplated the introduction of an ex-post merger review. However, following the new practise of Art. 22 EUMR, the French competition authority abandoned its work on the potential introduction of such an approach.

⁹⁶² A comprehensive overview of this debate is provided by Bundeskartellamt Hintergrundpapier, 19–21.

a) Advantages

In contrast to the current ex-ante approach, the introduction of an ex-post regime would allow the Commission to reduce the cases that represent ‘real’ threats whilst facilitating the current challenges posed by forecasting uncertainty.⁹⁶³ In other words, by looking at the effects on competition post-transaction, the Commission would be able to better identify competitive problems that were unpredictable at the time of the transaction and allow it to more effectively establish the transactions’ impacts on the development of the market concerned. The introduction of an ex-post review would therefore enable the Commission to reassess wrongly cleared transactions and provide it with a tool to withdraw its decisions in cases where it retrospectively concludes that the acquisition harms competition; for example, because the purchaser decided to discontinue the acquired innovation project shortly thereafter—an instance which, due to the prevailing information asymmetry in merger cases, is often hardly foreseeable for competition agencies.⁹⁶⁴

b) Disadvantages

At the same time, the introduction of an ex-post approach would lead to significant uncertainties for the parties involved as they would never know whether the European Commission would eventually withdraw its clearance. To some extent, these uncertainties could be reduced by giving the Commission only a specific amount of time in which it may intervene and unbundle the transaction. However, if the Commission was only given a certain time to intervene ex-post, it could adversely affect the behaviour of the merging companies since, as long as the intervention period is running and thus uncertainty is prevailing, the merging parties may not want to exploit synergies and take meaningful measures for the integration of the companies. Moreover, given that the merging parties would most likely strategically postpone the integration until an ex-post intervention is no longer possible, the measures’ effectiveness would only be very limited.⁹⁶⁵

In addition, even if the Commission decided to make merging parties live with the uncertainty, the market structure pre-transaction could only be restored through unbuilding the transaction, the enforcement of which is ex-

⁹⁶³ Apel and Polley, 311–312.

⁹⁶⁴ Prevailing information asymmetries in digital markets were also discussed in [Part III: Chapter 1: C. 3.3.](#)

⁹⁶⁵ Report on Competition Law 4.0, 65.

tremely difficult, especially where significant integration has taken place.⁹⁶⁶ This applies particularly to digital markets where innovation cycles are short and, thus, the innovation integrated may already be considered old at the time of the decision.⁹⁶⁷ Not to mention that the incumbent's knowledge gained through the data acquired may not be reversible in the first place. Accordingly, it may be very difficult for the European Commission to restore competition to the pre-merger state, which is one of the underlying goals of the ex-post regime.⁹⁶⁸

Against this background, it seems that although beneficial in theory, the introduction of an ex-post review may only have limited positive effects on killer acquisition cases in digital markets, and its enforcement could prove extremely burdensome in practice. In turn, this raises the question of whether the application of Art. 102 TFEU could provide a more effective tool to assess mergers ex-post.

2.2. Excursus: Ex-Post Review through Art. 102 TFEU

In 2022, Advocate General Kokott issued an Opinion, finding that Art. 102 TFEU, which prohibits the abuse of a dominant position by, for instance, foreclosing rivals and exploiting their customers,⁹⁶⁹ fulfils a complementary role to the EUMR. More precisely, she found that the application of Art. 102 TFEU could contribute to addressing the prevailing enforcement gap in capturing mergers that were not notified to the European Commission because they neither triggered thresholds at a national level nor at the EU level but nonetheless pose competitive concerns. Sharing her view, the European Court of Justice recently confirmed that national authorities are generally allowed to review ex-post transactions that fall below notification thresholds under

⁹⁶⁶ OECD (2020a), 47. See also [Part III: Chapter 1: D. 4](#), where the dissolution has also been discussed in the context of remedies.

⁹⁶⁷ This particularly applies when considering that the European Commission's decision may be appealed, it can take years until a final decision is released.

⁹⁶⁸ Note that this was, for instance, also confirmed in the US case *Evanston & Highland Park Hospital*, where the Federal Trade Commission considered it unproportionate to impose on the parties a structural remedy post-transaction given the significant integration that had taken place. See FTC, Issues Final Opinion and Order to Restore the Competition Lost in Evanston Northwestern Healthcare Corporations Acquisition of Highland Park Hospital, 28 April 2008 <<https://www.ftc.gov/news-events/news/press-releases/2008/04/ftc-issues-final-opinion-order-restore-competition-lost-evanston-northwestern-healthcare>> accessed 27 December 2023.

⁹⁶⁹ For more information on Art. 102 TFEU, see, for instance, O'Donoghue and Padilla.

Art. 102 TFEU.⁹⁷⁰ Given that this may have implications for killer acquisitions,⁹⁷¹ the following subsections will further elaborate on the importance of this ex-post instrument.

a) Background Information

With her Opinion, Advocate General Kokott revives the *Continental Can* judgement of 1973.⁹⁷² As already briefly explained in Part I, in this case, the Court supported the Commission's decision, where it found that Continental Can had abused its dominant position through the acquisition of a competitor.⁹⁷³ The European Court held that Art. 102 TFEU could be applied to acquisitions "that substantially fetters competition, i.e. that only undertakings remain in the market whose behaviour depends on the dominant one."⁹⁷⁴ This decision was considered highly important as it was issued at a time when there was only little national merger control in Europe, and the EUMR was not yet born. Hence, it provided the European Commission with a valuable instrument that it leveraged in several cases in the time before the EUMR came into force.⁹⁷⁵

With the enforcement of the first EUMR in 1989, as well as the increasing number of jurisdictions that introduced merger control in the EU, the findings of the *Continental Can* decisions have not been in the spotlight for a long time. This changed recently with the *Towercast v. Autorité de la concurrence* case in which the French Court of Appeal made a preliminary ruling request to the European Court of Justice to gain clarity regarding the potential application of Art. 102 TFEU to M&A.⁹⁷⁶

This case relates to an acquisition in the French television broadcasting sector, which prior to the transaction, featured three firms, namely TDF, TowerCast and Itas. This changed in 2016 when TDF purchased Itas. Given that the acquisition was below the notification thresholds, it did not require prior

⁹⁷⁰ Case C-449/21 *Towercast v Autorité de la concurrence*.

⁹⁷¹ Note that Advocate General Kokott explicitly mentions the term 'killer acquisition', see Case C-449/21, *Towercast v Autorité de la concurrence*, Opinion of AG Kokott, para. 48.

⁹⁷² Case 6/72 *Europemballage Corporation and Continental Can Company*.

⁹⁷³ See [Part I: Chapter 3: C. 3.1.b](#).

⁹⁷⁴ Case 6/72 *Europemballage Corporation and Continental Can Company*, para. 26.

⁹⁷⁵ See, for instance, Case T-51/89, *Tetra Pak Rausing v Commission*, where it was found that the acquisition of Liquipack by Tetra Pak allowed the latter to strengthen its dominant position and that the transaction prevented or at least delayed the entry of a new rival into that market.

⁹⁷⁶ See Case C-449/21, Request for a preliminary ruling from the Cour d'appel de Paris (France) lodged on 21 July 2021 – *Towercast v Autorité de la concurrence*.

approval—neither under the national merger control regulation⁹⁷⁷ nor under the EUMR⁹⁷⁸. Moreover, no referral according to Art. 22 EUMR took place.⁹⁷⁹ Hence, in 2017, TowerCast complained to the French Competition Authority that by acquiring Itas, TDF abused its dominant position. This complaint was rejected by the French authority, finding that even though TDF holds a dominant position, no abuse of such position can be found.⁹⁸⁰ In other words, it established that Art. 102 TFEU is not applicable to concentrations that do not exhibit any anti-competitive conduct other than the transaction itself. Based on this decision, TowerCast appealed the decision to the Paris Court of Appeal, which then referred to the question of whether a concentration that has not been subject to prior review under EU or national merger control law can be reviewed under Art. 102 TFEU to the European Court of Justice.⁹⁸¹

b) *Opinion of Advocate General Kokott*

In addressing the question posed by the Paris Court of Appeal, Advocate General Kokott establishes that Art. 102 TFEU is directly applicable as primary law and that the EUMR does not enjoy a status of a *lex specialis*, especially since it constitutes secondary law.⁹⁸² Instead, she argues that Art. 102 TFEU supplements the EUMR in cases that “do not meet the thresholds under merger control and are therefore not subject, in principle, to ex-ante control”.⁹⁸³ By relying on the principle of legal certainty, she further specifies that Art. 102 TFEU cannot be applied where the transaction in question was approved as part of merger control.⁹⁸⁴

⁹⁷⁷ See Art. L. 430-2 of the French Commercial Code.

⁹⁷⁸ See Art. 1 EUMR. See also [Part III: Chapter 1: A. 3.1.](#)

⁹⁷⁹ For more information on Art. 22 EUMR, see [Part III: Chapter 1: B. 2.](#)

⁹⁸⁰ See Autorité de la concurrence, ‘Décision 20-D-01 du 16 janvier 2020’ (Autorité de la concurrence, 16 Janvier 2020) <<https://www.autoritedelaconcurrence.fr/fr/decision/relative-une-pratique-mise-en-oeuvre-dans-le-secteur-de-la-diffusion-de-la-television>> accessed 27 December 2023.

⁹⁸¹ Case C-449/21, *Towercast v Autorité de la concurrence*.

⁹⁸² Case C-449/21, *Towercast v Autorité de la concurrence*, Opinion of AG Kokott, para. 43. See also paras. 29–31, where Kokott explains in more detail the supremacy of Art. 102 TFEU over the EUMR.

⁹⁸³ *ibid.*, para. 48.

⁹⁸⁴ *ibid.*, para. 60.

c) *Confirmation of the European Court of Justice*

In March 2023, the European Court of Justice confirmed the Advocate General's Opinion by finding that transactions that (i) do not meet EU and national merger control thresholds and (ii) have not been referred to the European Commission according to Art. 22 EUMR may be subject to Art. 102 TFEU.⁹⁸⁵

d) *Policy Implications*

In general, it can be said that, from a policy perspective, the decision issued by the European Court of Justice is highly welcome since it allows the European Commission to address below-threshold acquisitions that have not been referred according to Art. 22 EUMR. At the same time, the decision implies that any transaction referred to the Commission through Art. 22 EUMR can no longer be scrutinised pursuant to Art. 102 TFEU. It may therefore become a strategic decision of the Member States to decide whether they want to refer a potentially problematic acquisition so that it can be reviewed ex-ante by the European Commission or whether they prefer to wait so that the transaction can still be scrutinised thereafter. Essentially, the Member States will have to weigh the risks of the transaction being banned. In cases in which they estimate the chances of the transaction being prohibited low, they may therefore be incentivised to wait for Art. 102 TFEU to be applied. Given that Art. 102 TFEU is applied after the infringement has already occurred, i.e., when competition has already been distorted, it would generally be preferable if the Member States referred such cases to the Commission ex-ante and that the avenue of Art. 102 TFEU is merely taken in cases whose outcomes are highly uncertain. Such an approach would also be preferable from a legal certainty perspective as the enforcement of transactions through Art. 102 TFEU increases legal uncertainty for merging parties that are neither caught by any thresholds nor referred to the Commission through Art. 22 EUMR.⁹⁸⁶

⁹⁸⁵ Case C-449/21 *Towercast v Autorité de la concurrence*, paras. 52–53. For a more thorough analysis of the decision, see Czapracka Katarzyna et al., 'European Court of Justice confirms that national authorities can review ex-post below-threshold mergers under abuse of dominance rules' (*White & Case*, 24 March 2023) <<https://www.whitecase.com/insight-alert/european-court-justice-confirms-national-authorities-can-review-ex-post-be-low>> accessed 27 December 2023.

⁹⁸⁶ For more information on the legal uncertainty arising from this judgement, see Henry, 28–29.

3. Implications of the Main Findings

From the above, it can be concluded that with the introduction of Art. 22 EUMR in combination with the possibility to assess transactions that have not been referred ex-post through Art. 102 TFEU, a satisfactory legal framework has been created to spot nascent firms and enforce those transactions that fall through the ‘referral net’. In fact, it seems that with regard to the challenges posed by the turnover thresholds, no alternative solution would have been as effective as the introduction of the new Guidance on Art. 22 EUMR. Accordingly, the Commission’s decision to tackle the jurisdictional challenges posed by killer acquisitions through a change of practice of Art. 22 EUMR is highly welcome. How the framework created by Art. 22 EUMR could be rendered even more effective will be addressed in the following subchapter.

B. Procedural Aspects

As outlined in Part III, the new interpretation of Art. 22 EUMR allows the European Commission to review virtually any deal referred to under Art. 22 EUMR, irrespective of whether the national thresholds or those provided by the EUMR are met.⁹⁸⁷ In the previous chapter, it has been touched on that although the new practice is generally highly welcome, it also raises major legal uncertainty on the part of the merging parties, especially due to the lack of guidance regarding the self-assessment.⁹⁸⁸ Moreover, it may lead to a significant procedural delay that is to the detriment of merging parties. Hence, this subchapter seeks to briefly discuss how the current practice of Art. 22 EUMR could be rendered more effective for both the European Commission and the merging parties.

1. Improving Legal Certainty for Merging Companies

It would be very useful for merging companies if the Commission further specified and narrowed the criteria catalogue so that merging parties can exclude referrals with more legal certainty, thereby reducing the number of consultations with competition authorities. Ideally, the provisions would be subdivided into industry-specific guidelines, which would be particularly crucial in

⁹⁸⁷ [Part III: Chapter 1: B. 2.](#)

⁹⁸⁸ [Part III: Chapter 1: B. 2.7.](#)

light of the specific features of digital markets.⁹⁸⁹ Guidance as to how exactly the Commission could design the criteria for the substantive analysis will be given below, where a legal test is suggested that could be helpful for merging companies too.⁹⁹⁰

2. Increasing the Effectiveness of Art. 22 EUMR

Unless the self-assessment for merging companies is drastically improved, the new practice of Art. 22 EUMR will likely lead to more cases being notified to national competition authorities as well as the European Commission. Since the new practice requires resource-intensive fact-findings and engagements in complex legal analyses, the effectiveness of the new Guidance and the subsequent legal analysis largely depends on the provision of sufficient resources.⁹⁹¹ Accordingly, to guarantee the effectiveness of Art. 22 EUMR, as well as high-quality merger scrutiny, it is almost indispensable to raise European competition authorities' resources in the future.⁹⁹² This necessity was indirectly also confirmed in recent empirical studies, showing that increasing competition authorities' budgets would also lead to better merger scrutiny. In this regard, Macher and Mayo found, for example, that raising competition authorities' budget would have "a positive and statistically significant effect on merger challenges [...]. For instance, the estimations indicate that a ten percent increase from 2017 Agencies' funding levels (that is, from \$478MM to \$526MM) would yield an increase in the eligible MEI [Merger Enforcement Intensity] from 2.8 to 2.9 percent and would generate roughly an eight percent increase in the number of merger challenges (from 45.7 to 49.2)."⁹⁹³ In light of these findings, it seems crucial to generally raise European competition authorities' resources as much as possible to render the new practice of Art. 22 EUMR as effective as possible in the fight against killer acquisitions. This could also contribute to lowering the procedural time spent by the European Commission until a decision is issued, which will be discussed next.

⁹⁸⁹ For more information on the features of digital markets, see [Part I: Chapter 2: A.](#)

⁹⁹⁰ [Part IV: Chapter 1: C. 3](#) and [Part IV: Chapter 1: C. 4.](#)

⁹⁹¹ See also [Part III.](#)

⁹⁹² See Portuese, 33, who makes the point more generally and does not specifically refer to Art. 22 EUMR.

⁹⁹³ Macher and Mayo, 725.

3. Reducing the Period between the Complaint and the Invitation Letter

As ascertained in Part III, the procedural duration can be very long in cases reported under Art. 22 EUMR.⁹⁹⁴ Once a Member State has notified the European Commission within 15 days, other Member States can join the referral request within 15 working days. Therefore, in theory, the total time limit consists of 30 working days. However, in practice, the time limit for follow-up applications depends on the last Member State to be informed by the Commission of the original request for a referral, which in the *Illumina/Grail* case required 47 working days. Once it receives all requests, the Commission has another ten working days to decide whether it will accept the referral. If the Commission accepts the referral, additional time will be needed for the parties to hand in more information through the Form CO⁹⁹⁵. This applies especially when the Commission considers the case to raise concerns on a substantive level, as, in these instances, the parties will have to spend a considerable amount of time on the pre-notification phase. Given that in the time span between the end of the pre-notification phase and the formal notification of the transaction, the deadlines are not triggered for the EUMR, the duration of the whole process can become very long for the merging parties. In other words, Art. 22 EUMR can inject a significant procedural delay into any transaction.⁹⁹⁶

In the future, it would therefore be welcome if this duration could be reduced. This particularly applies to the sending of the invitation letter to the Member States, which, for instance, took the Commission 47 working days in the *Illumina/Grail* case. To ensure a swifter process, the parties could generally also contemplate submitting briefing papers to the relevant competition authorities, explaining the nature of the transaction in question and providing reasons for why they consider not meeting the referral criteria.

⁹⁹⁴ [Part III: Chapter 1: B. 2.4.](#)

⁹⁹⁵ The Form CO is the official form for standard merger notifications. It requires the parties to submit extensive and detailed information, among other things, regarding the transaction, the relevant markets they operate in and their market positions. The requirements are specified in Annex I of Regulation 802/2004.

⁹⁹⁶ Bushell Gavin, 'How Illumina-ting: the EU Merger Regulation and the brutal operation of power under Article 22 EUMR' (*Kluwer Competition Law Blog*, 20 April 2021) <http://competitionlawblog.kluwercompetitionlaw.com/2021/04/20/how-illumina-ting-the-eu-merger-regulation-and-the-brutal-operation-of-power-under-article-22-eumr/#_ftnref7> accessed 27 December 2023.

C. Substantial Analysis

Besides the notification challenges, killer acquisitions also pose various problems to the substantive analysis. Based on the observations made in Part III,⁹⁹⁷ this subchapter seeks to discuss how the European Commission could better embrace uncertainties arising in relation to the standards of proof in the future. This is followed by an analysis of the current assessment of competitive harm, which aims to shed light on different approaches that could contribute to more effectively detecting harm emanating from killer acquisitions in digital markets.

1. Tackling the High Standards of Proof

In Part III, it was found that the existing standards of proof are generally high—a fact that poses daunting challenges to the assessment of killer acquisitions.⁹⁹⁸ For this reason, the following sections address the question of how the prevailing high standards of proof could be reduced.

1.1. Introducing a Balance of Harm Test

Probably one of the most famous proposals brought forward regarding the amendment of the standards of proof is the introduction of a ‘balance of harms’ test made by the Furman Report. In essence, the Report found that the currently applied ‘balance of probabilities’ test, which assesses whether a negative outcome is more likely than not, should be replaced by a ‘balance of harms’ test. According to the balance of harms test, “the scale as well the likelihood of harm in merger cases involving potential competition and harm to innovation”⁹⁹⁹ should be taken into account. It, therefore, imposes the duty on competition authorities to identify the likelihood of harm that would be caused by clearing the transaction in question.

a) *Advantages*

The Panel in the Report ascertains that such an approach would allow competition authorities to tackle what it finds to be a prevailing systematic underenforcement of competition policy in the technology sector.¹⁰⁰⁰ In this re-

⁹⁹⁷ See [Part III: Chapter 1: C.](#)

⁹⁹⁸ [Part III: Chapter 1: C. 3.](#)

⁹⁹⁹ Furman Report, 13.

¹⁰⁰⁰ For more information on its assessment of underenforcement, see Furman Report, 91 et seq.

gard, it notes that instead of purely focusing on probabilities, by balancing harms, competition law could essentially consider “[t]he magnitude and likelihood of potential benefits of the merger [...]. To the extent that these will be passed through to consumers, and especially to the extent they involve enhancements to valuable innovation, these should be set against any harm from the merger.”¹⁰⁰¹ Accordingly, unlike under the current standard, according to which the European Commission may only prohibit a transaction if it finds that it will more likely than not substantially reduce competition,¹⁰⁰² the new test would allow it to consider the severity of the harm.

The comparison of the following two merger scenarios should make the point clearer:

- Scenario 1: acquisition X, where the likelihood of an outcome that is to the detriment of competition amounts to 70%.
- Scenario 2: acquisition Y, where the likelihood of a negative outcome amounts to just about 10%, but if this 10% turn into reality, the effects for competition are considerably more detrimental, i.e., the costs borne by consumers are significantly more severe.

Under the current probability standard, the European Commission could only intervene in cases of the first scenario but would not be able to intervene in the second scenario. This is because, although the harm is greater, the probability for it to materialise is very small. However, by applying the new test proposed in the Furman Report, the European Commission would be able to further consider the fact that a transaction bringing a small risk of a very bad outcome can be as much of a concern as an acquisition with a high risk of a mildly bad outcome.¹⁰⁰³

b) *Disadvantages*

While the proposed amendments of considering harm would indeed allow the European Commission to better take into account the costs associated with misprediction,¹⁰⁰⁴ it would also be very resource-intensive and difficult to im-

¹⁰⁰¹ *ibid.*, 99.

¹⁰⁰² For more information on the standards of proof, see [Part III: Chapter 1: C. 3.1.](#)

¹⁰⁰³ See also Baker James, ‘Rebalancing the Scales: Is a New Framework Needed to Assess Antitrust Risk’ (Frontier Economics, October 2019) <<https://admin.frontier-economics.com/media/2zhggost/rebalancing-the-scales.pdf>> accessed 27 December 2023.

¹⁰⁰⁴ Bourreau and de Streel (2020), 19–20.

plement. After all, it would require the Commission to (i) ascertain a range of possible future outcomes, (ii) estimate their probability, and (iii) eventually look at the effects each of these outcomes may have on the market—an exercise which poses significant practical obstacles.¹⁰⁰⁵ Moreover, the Commission would need to find supporting evidence for every point in order to show that the theory of harm is not speculative,¹⁰⁰⁶ which under the current standard of proof is anyway very problematic in killer acquisition cases.¹⁰⁰⁷ Essentially, under the proposed balance of harms test, the Commission would still have the burden of demonstrating that an expected value of harm is likely to be positive.

Based on these findings, it, therefore, seems that this proposal does not sufficiently embrace the inherent uncertainties that killer acquisitions bring along. This is also reflected in a statement given by the UK Competition and Market Authority itself, finding that the test cannot be applied “in a transparent and robust way”,¹⁰⁰⁸ whereupon it decided against the adoption of this approach.

1.2. Shifting the Burden of Proof

An alternative approach to the introduction of the balance of harm could be to reverse the burden of proof in cases where the transactions involve nascent firms. According to this approach, it is up to the merging parties to provide evidence that the transaction does not have anti-competitive effects or that the expected efficiency outweighs the anti-competitive effects.¹⁰⁰⁹ As will be explained in the following subsections, there are different forms of how such a shift of the burden of proof could be designed.

a) Reversing the Burden of Proof

A shift of the burden of proof where the acquirer holds a dominant position has been discussed worldwide. It was, for instance, proposed by the European Commission Report,¹⁰¹⁰ the Stigler Report,¹⁰¹¹ the ACCC Report¹⁰¹² and a former

¹⁰⁰⁵ Lécuyer, 45–46; Turgot, 117; ACCC Report, 106.

¹⁰⁰⁶ Caro de Sousa and Pike, 8.

¹⁰⁰⁷ [Part III: Chapter 1: C. 3.](#)

¹⁰⁰⁸ CMA, Advice of the Digital Markets Taskforce, 63.

¹⁰⁰⁹ Motta and Peitz, 14.

¹⁰¹⁰ EC Report, 51.

¹⁰¹¹ Stigler Report, 17.

¹⁰¹² ACCC Report, 106–107.

chief economist in the EU¹⁰¹³. The OECD has even expressed the view that reversing the burden of proof and establishing a refutable presumption is “perhaps the most important proposal that has emerged from the debate over the acquisition of nascent firms.”¹⁰¹⁴

aa) Advantages

The introduction of such an approach would not only unburden the European Commission to find sufficient evidence but would also allow it to pass better-informed judgements precisely because it would be up to the notifying parties to prove that the transaction has pro-competitive effects.¹⁰¹⁵ This is because it would force the merging parties to make use of all the information they have, which they are likely not to fully disclose otherwise. After all, the acquirer would need to find sufficient arguments to convince the European Commission as opposed to the other way around—a development which would be particularly practical in transactions involving large technology firms acquiring nascent firms and where the intentions of the acquirer are difficult to ascertain due to information asymmetries.¹⁰¹⁶

bb) Disadvantages

On the other hand, one argument that has been brought forward against the introduction of a reverse of the burden of proof is that many killer acquisitions—which, as seen in Part II especially applies to reverse killer acquisitions—may create synergies and increase efficiencies. Therefore, on a market level, such transactions may often exhibit ambiguous effects,¹⁰¹⁷ making a systematic shift of the burden of proof unjustifiable from neither an economic nor empirical point of view.¹⁰¹⁸ According to this line of reasoning, reversing the burden of proof may leave the Commission with an incommensurate level of discretion, which could lead to arbitrary decision-making.¹⁰¹⁹ Moreover, it has been argued that the adoption of such an approach may adversely affect the

¹⁰¹³ Motta and Peitz, 13–14; see also Valletti Thomas, ‘How to Tame the Tech Giants: Reverse the Burden of Proof in Merger Reviews’ (Pro Market, 28 June 2021) <<https://www.promarket.org/2021/06/28/tech-block-merger-review-enforcement-regulators/>> accessed 27 December 2023.

¹⁰¹⁴ OECD (2020a), 39.

¹⁰¹⁵ EC Report, 4.

¹⁰¹⁶ A comprehensive discussion on the challenges that finding sufficient evidence poses to killer acquisitions cases was led in [Part III: Chapter 1: C. 3.3.](#)

¹⁰¹⁷ [Part II: Chapter 2: D. 3.1.](#); see also Furman Report, 101; Levy, Mostyn and Buzata, 62 et seq.

¹⁰¹⁸ Pérez de Lamo, 57; see also Turgot, 117.

¹⁰¹⁹ *ibid.*

willingness of VC investors to fund risky projects of nascent companies for fear that they may not be able to sell their company.¹⁰²⁰ Based on these different arguments, several authors have concluded that a complete reverse of proof would constitute an unproportionate solution.¹⁰²¹

In general, it can indeed be established that shifting the burden of proof may eventually bear the risk that mergers that are caught by the turnover thresholds or are referred to the European Commission through Art. 22 EUMR are presumed illegal without the Commission even showing that there may be a possible loss of competition. It would essentially lead from one extreme to another.¹⁰²² Hence, the following subsection elaborates on an alternative solution.

b) Introducing a Burden-Shifting Framework

A less drastic yet effective alternative to the shift of the burden of proof is provided by the burden-shifting framework developed by Caro de Sousa and Pike. The framework consists of a three-stage test that allocates the burden of proof to various parties. Among other things, it was designed to address the uncertainty arising when analysing start-up acquisitions.

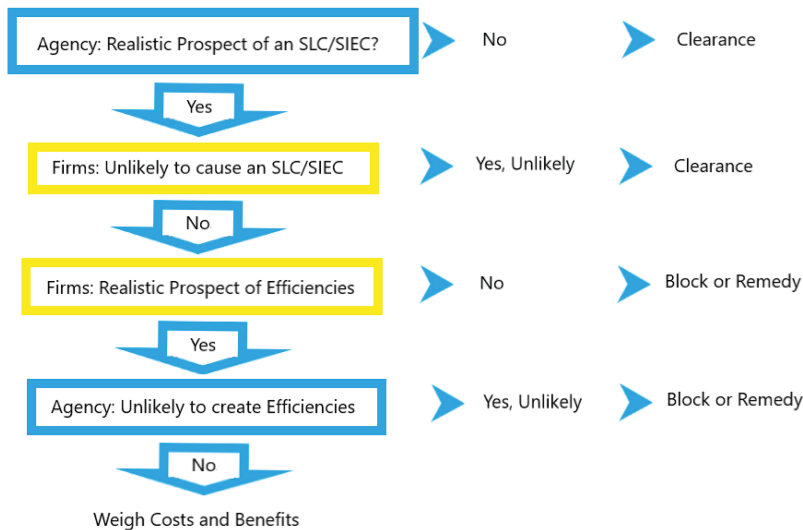
In a nutshell, the burden-shifting framework works as follows: first, the European Commission would be required to demonstrate the presence of a realistic prospect of harm. If it shows that a realistic prospect of harm is present, the burden of proof would be reverted to the notifying parties. This would lead to the second step, where the merging parties would have to show that anti-competitive effects are unlikely or that there is a realistic prospect that pro-competitive efficiencies dominate. In a third step, these arguments would again need to be assessed by the Commission. If it concludes that the arguments brought forward by the merging parties cannot outweigh the anti-competitive effects, it shall ban the transaction. Thereupon, the parties may request the General Court to review the Commission's decision. The General Court can then ask the Commission to show both a reasonable prospect of

¹⁰²⁰ For more information, see [Part II: Chapter 1: A. 2.3](#). See also Furman Report, 101; Levy, Mostyn and Buzata, 63 et seq.

¹⁰²¹ Levy, Mostyn and Buzata, 64; Rizzo, 13; Furman Report, 101, finding that “[a] presumption against all acquisitions by large digital companies is not a proportionate response to the challenges posed by the digital economy, and has therefore been ruled out in favour of the balance of harms approach.”

¹⁰²² Caro de Sousa and Pike, 9.

harm and why it rejected the parties’ evidence on the unlikelihood of harm.¹⁰²³ The following figure summarises this mechanism:



Note: Yellow indicates a burden on the firms while blue indicates a burden on the agency. All decisions on whether a burden has been met would be for the agency to make, each of which would be judicially reviewable.

Figure 1: Burden-Shifting Framework¹⁰²⁴

It ought to be specified that for the finding of a ‘realistic prospect of harm’, the European Commission could adopt a similar approach to the UK Competition and Market Authority, which recently established that for finding a ‘realistic prospect’ of an impediment to competition, it can apply the same standard of probability used in deciding whether or not to initiate the main examination procedure of Phase II.¹⁰²⁵ Comparable proposals have also been made in other

¹⁰²³ *ibid*, 10 et seq.

¹⁰²⁴ Caro de Sousa and Pike, 12.

¹⁰²⁵ CMA, Advice of the Digital Markets Taskforce, 63 and Appendix F, F30–F31, finding that “[T]he Enterprise Act 2002 does not specify a particular threshold in this regard, but states that the CMA must refer a merger for a phase 2 investigation if it believes that it is or ‘may’ be the case that a merger ‘may’ be expected to result in an SLC. [...] The test is described in the CMA’s guidance as a ‘reasonable belief, objectively justified by relevant facts, as to whether or not it is or may be the case that the merger has resulted, or may be expected to result, in an SLC’. The guidance further explains that this is a finding at a ‘lower range of probability’ than the balance of probabilities standard, where the ‘relevant likelihood’ of an SLC is ‘greater than fanciful, but below 50%.’”

jurisdictions. For instance, the Australian Competition and Consumer Commission has suggested that intervention should already be permitted if an impediment to competition represents ‘a possibility that is not remote’.¹⁰²⁶

The adoption of a similar understanding of the finding of a ‘realistic prospect of harm’, i.e., where establishing a significant impediment of effective competition is, as nicely put by the CMA, “greater than fanciful, but below 50%”,¹⁰²⁷ would also be welcome for killer acquisition cases in digital markets occurring in the EU. Regarding the requirement for the standard of proof,¹⁰²⁸ it could be suggested that the European Commission needs to underpin its arguments with evidence that clearly reflects its concerns but does not need to be as solid, consistent and coherent as in Phase II. Such an approach would contribute to lowering the existing high standards of proof that may often be insurmountable in such cases whilst still requiring the European Commission to show a certain likelihood of harm as opposed to simply reversing the burden of proof.

To summarise, the burden-shifting framework as proposed by Caro de Sousa and Pike would represent an effective way to address challenges related to the uncertainties prevailing in the assessment of killer acquisition cases in digital markets in which potentially far-reaching damages to competition and innovation can only be forecasted with low accuracy. Moreover, by allocating the burden of proof to all parties, including the Commission, the burden-shifting framework strikes a better balance than if a complete reversing of the burden of proof was implemented. Finally, given that the burden may at some point lie on the merging parties, this approach may also help alleviate the prevailing information asymmetry concerns between the merging parties and the Commission raised in Part III.¹⁰²⁹

1.3. Ensuring the Truthfulness of the Documents Submitted

Besides meeting the high burden of proof, it can also prove extremely difficult for the Commission to ascertain whether the merging companies’ submitted documents are truthful. Although this applies to merger control in general, it particularly holds true in the digital sector, where the boundaries of technol-

¹⁰²⁶ ACCC Report, 106.

¹⁰²⁷ UK Merger Assessment Guidelines (CMA129) 2021, para. 2.33.

¹⁰²⁸ Note that in Part III, it was distinguished between the measurement of probability and the requirements on which this probability is based, see [Part III: Chapter 1: C. 3.1.](#)

¹⁰²⁹ Information asymmetries were discussed in [Part III: Chapter 1: C. 3.3.](#)

ogy are continuously pushed and where it is hard for the Commission to ascertain the truthfulness of incumbents' statements regarding these limits. To alleviate this problem, the following measures could be taken.

a) *Introducing Dawn Raids to Merger Control*

One option to improve the European Commission's set of information in killer acquisition cases—especially with regard to the truthfulness of the information—could be the introduction of dawn raids to merger control. Similar to cases in which there are suspicions of the existence of a cartel, dawn raids in merger control would allow the European Commission to carry out unannounced inspections at the premises of the merging parties. This would enable it to get more unfiltered and unbiased sources than if it was solely relying on the documents provided directly by the parties themselves. Accordingly, such an approach could allow the Commission to obtain a better picture of the motives behind a potentially harmful acquisition. After all, the notifying parties rarely send the Commission a smoking gun that shows its potential anti-competitive intentions, like plans of shutting down an innovation project post-transaction.¹⁰³⁰

In comparison to dawn raids in cartel cases, the surprise element in merger control cases would generally be less pronounced. This is because merger control is applied ex-ante and thus requires the merging companies to notify the Commission before the transaction. Yet considering the number of mergers that are notified yearly, that is, approximately 300,¹⁰³¹ it is still likely that the notifying companies would not always take all the precautions necessary to cover traces that may allow the Commission to find incriminating evidence. Therefore, it is unlikely that they would always expect dawn raids, particularly where they are just in the pre-notification stage, the number of which will presumably increase with the new practice of Art. 22 EUMR.¹⁰³² Accordingly, although resource-intensive, such an approach could be a useful addition to collecting valuable evidence in potential killer acquisition cases.

¹⁰³⁰ Lear Report, 44.

¹⁰³¹ Over the last 10 years, approximately 300 mergers have been notified to the European Commission on average, see ECA Special Report, 9.

¹⁰³² [Part III: Chapter I: B. 2.](#)

b) *Binding the Parties to the Submitted Evidence*

Another way to make sure that the merging parties submit truthful evidence would be to bind them by the evidence submitted at the time of the transaction. To this end, the European Commission could, for instance, transform the parties' evidence and statements regarding critical points into a necessary condition for the merger to be cleared. For instance, in the *Facebook/WhatsApp* case, the Commission could have approved the merger under the condition that the data sets were not merged, even if the parties found a technical way to do so (which they did). In the context of killer acquisitions, such an approach could be particularly useful as it would allow the Commission to require the merging parties to show what exactly the purpose of the purchase is and only approve the merger under the condition that the innovation is used in the way described. If the merging parties sought to change the purpose of the acquisition post-transaction, for instance, because technological progress allows them to integrate the target in a more effective way, they would have to notify the Commission pre-implementation, whereupon the authority could reassess the effects of these changes on competition and innovation.

In general, the effectivity of binding parties to the submitted evidence would require that (i) the European Commission can impose such remedies on the parties since, as stated above, to date, only the parties themselves can submit remedies and (ii) that the Commission would need to extend its Remedies Notice from medium to long-term monitoring measures.¹⁰³³ Although such an extension of the Remedies Notice would be quite far-reaching and potentially unproportionate, it may be worth a thought in the context of digital markets, especially where the transaction concerned involves highly valuable data that make the damages caused through a wrong approval hardly reversible.¹⁰³⁴

2. Propositions of How the Substantive Analysis Could Be Changed

Having discussed various solutions for the prevailing high standards of proof, this section turns to the substantive analysis. In Part III, it was established that the existing substantive analysis for finding a significant impediment to competition is not apt to effectively consider harms emanating from killer ac-

¹⁰³³ Compare with the current remedies framework discussed in [Part III: Chapter 1: D.](#)

¹⁰³⁴ See also [Part IV: Chapter 1: A. 2.1.b\).](#)

quisition cases.¹⁰³⁵ Hence, this section aims to analyse whether the current framework could be stretched or amended in a way to better address such transactions in the future. To this end, it departs from the idea that, as suggested by Cr mer, de Montjoye and Schweitzer in the European Commission Report, “less emphasis on analysis of market definition, and more emphasis on theories of harm and identification of anti-competitive strategies”¹⁰³⁶ shall be put. This is because, as highlighted above, defining markets in killer acquisition cases can be highly challenging and is not necessarily conclusive.¹⁰³⁷ Hence, this section will exclusively focus on how the existing theories of harm could be amended to more effectively detect harm emanating from killer acquisitions in digital markets.

2.1. Broadening the Term ‘Potential Competitor’

In Part III, it was ascertained that the current loss of potential competition theory of harm may often not be applicable to killer acquisitions in digital markets as the merging parties may frequently not (yet) exhibit sufficient horizontal overlaps to meet the requirements foreseen in the Horizontal Merger Guidelines, particularly not where the target is integrated post-transaction.¹⁰³⁸ Recognising this problem, in the *Illumina/Grail* case, the European Commission considered, for the first time, a longer time frame by looking at the effects of the merger by 2035. The legality of this practice, however, remains to be seen with the General Court’s decision.¹⁰³⁹

In the meantime, it may be interesting to discuss whether, instead of considering the distant future—an exercise that is fraught with a lot of uncertainty—the loss of potential competition could be rendered more effective by broadening the Commission’s understanding of the term ‘potential competitor’.

Such an approach would require the Commission to create a broader basis to find potential overlaps. In the context of killer acquisitions, one effective way to do so would be, for instance, to view any company as a potential competitor that (i) serves similar user groups and (ii) exhibits functionalities overlap. After all, these metrics are often more conclusive in the context of start-up acquisitions than the assessment of interchangeability as required by the market definition.

¹⁰³⁵ [Part III: Chapter 1: C.](#)

¹⁰³⁶ EC Report, 3–4.

¹⁰³⁷ For more information, see [Part III: Chapter 1: C. 1.](#)

¹⁰³⁸ [Part III: Chapter 1: C. 5.1.b\).](#)

¹⁰³⁹ [Part III: Chapter 1: C. 5.3.](#)

Whilst indeed more comprehensive, expanding the concept of potential competitors in such a way would also bear the risk that the market power of the acquirer is underestimated. This is because broadening the understanding of potential competitors within the current framework would also mean that the European Commission would most likely find more ‘other potential competitors’ to be active in the market concerned. As a result, by relying on these metrics, it may become increasingly challenging for the Commission to demonstrate that the number of other competitors potentially entering the market would not exert sufficient competitive pressure, i.e., would not alleviate concentration concerns. Accordingly, the broadening of the term ‘potential competitors’ would lead to an increasingly vague term, making it difficult for the Commission to find competitive harm.¹⁰⁴⁰ This thesis, therefore, rejects the adoption of such an approach.

2.2. Adapting the Understanding of Innovation Competition

Given that the broadening of the term ‘potential competitor’ would most likely not alleviate the challenges posed by killer acquisitions in digital markets, the question arises of whether the amendment of the current loss of innovation competition theory of harm would constitute a more conclusive solution.

a) *Underlying Challenges of the Current Approach*

Taking a step back, it was shown in Part I that the EU merger control does not only assess restrictions to the process of competition, but ever since the *General Electric/Honeywell* case, it also requires that such restrictions harm consumers.¹⁰⁴¹ This so-called ‘consumer welfare approach’¹⁰⁴² thereby heavily relies on the neo-classical economic theory, which assumes that markets consist of individuals that make rational and well-informed decisions to maximise utility.¹⁰⁴³ Drafting an analytical framework that relies on these assumptions has the consequence that it seeks to foster behaviours that maximise consumer welfare or, more broadly speaking, create economic efficiency.¹⁰⁴⁴ The reason for this can be found in neo-classical economics’ understanding of innovation as being strongly incentive-driven, which in turn shapes competition policy in

¹⁰⁴⁰ EC Report, 119.

¹⁰⁴¹ [Part I: Chapter 3: C. 3.1.c\).](#)

¹⁰⁴² Note that there exist different forms of this approach, see [Part I: Chapter 3: C. 3.2.c\).](#) However, they all have in common that they rely on the neo-classical economic theory.

¹⁰⁴³ [Part I: Chapter 3: C. 3.2.b\).](#)

¹⁰⁴⁴ [Part I: Chapter 3: C. 3.2.a\).](#)

a way that maximises the financial incentives of the market players to innovate.¹⁰⁴⁵ As shown in Part III, such an understanding of innovation leads to an outcome-oriented analysis, which, in the context of innovation, reduces it to the narrow parameter of price as a proxy for value. Given how difficult it is to measure value through alternative metrics—especially in the context of innovation¹⁰⁴⁶—this thesis does not aim to elaborate on another outcome-based proxy but rather seeks to establish safeguards that allow the European Commission to protect the process of innovation competition itself.

A look at the e-reader market may illustrate the importance of protecting the process of innovation competition: in 2004, Sony released its first e-reader, which was followed by Amazon's launch of its first Kindle three years later. The success of the first e-readers attracted many competitors to the e-ink market, which introduced a wide range of features and experimented with various display and device types, leading to growing diversity in this market. However, after Amazon realised that e-readers could be reduced to a mere means to sell consumers e-books, it stripped every unnecessary innovative feature out of its devices in order to render them as cheap as possible. These low prices had the result that it had become almost impossible for more innovative rivals to stay in the market. Eventually, this development led to the stagnation of innovation for almost a decade in the market and essentially allowed the least innovative yet cheapest devices to succeed for many years.¹⁰⁴⁷

Even though the e-ink market has become more competitive again over the last few years with, for instance, Remarkable introducing a new product category by launching a tablet with a pencil that not only serves reading purposes but also allows users to write on the tablet,¹⁰⁴⁸ this example shows that what is considered the most efficient innovation from a neo-classical economics perspective does not necessarily correspond to the most valuable innovation from a societal perspective but instead may actually even hamper a more diverse

¹⁰⁴⁵ Ahuja, 6–9.

¹⁰⁴⁶ Among other things, this was shown in the context of the quantitative assessment of substitutability, demonstrating that valuing innovation through other parameters than price, such as quality, for instance, is very difficult. For more information in this regard, see [Part III: Chapter 1: C. 1.2.b\)aa](#)) and [Part III: Chapter 1: C. 1.3.b\)](#).

¹⁰⁴⁷ TechAltar, 'Why E-Ink innovation is so slow' (Youtube, 21 December 2021) <https://www.youtube.com/watch?v=8Xr9X6cbQ68&ab_channel=TechAltar> accessed 27 December 2023. He also provides a robust summary on the development of the e-reader market over the last years.

¹⁰⁴⁸ For more information, see Remarkable, <<https://remarkable.com/>> accessed 27 December 2023.

innovation landscape.¹⁰⁴⁹ The most valuable innovation can only be achieved if the process of innovation competition is protected, which presupposes that competition is understood in a more deontological view as a value on its own.

b) *Importance of Choice*

Understanding competition in a more deontological view as a value on its own also has an impact on how choice is understood. The current notion of choice, as encapsulated by neo-classical economics, is well reflected in the European Commission's Guidance on Art. 102 TFEU: "Consumers benefit from competition through lower prices, better quality and a wider choice of new or improved goods and services."¹⁰⁵⁰ According to this statement, choice is currently considered a mere parameter of a competitive outcome.

On the other hand, understanding competition as a value on its own allows the Commission to frame choice as a necessary precondition of competition. To underpin this point, one can consider Smith's words: "[...] by directing [the] industry in such a manner as its produce may be of its greatest value, he [i.e. the individual] intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was not part of his intention."¹⁰⁵¹ To take up the Commission's understanding of choice, it seems that it only focuses on the outcome of Smith's statement that the presence of consumer choice increases the welfare of individuals and society. However, it overlooks the point of Smith's vision that lies in consumers' choice between undertakings rather than just their end products or services. This is because only when choice between undertakings is promoted are producers' choices directed in a way that eventually increases welfare. Thus, according to Smith, choice is not a mere parameter for welfare but rather a necessary precondition for competition to function well in the first place.¹⁰⁵²

Understanding choice through this lens also means that, as stated by Doctorow, "[t]he reason to want more choice isn't grounded in consumerism."¹⁰⁵³

¹⁰⁴⁹ At the heart of this point lies the criticism that neo-classical economics relies on the subjective preferences of consumers which cannot always be used to achieve the optimal outcome. For a comprehensive analysis on this topic, see Lianos, 171 et seq.

¹⁰⁵⁰ Guidance on Art. 102 TFEU, para. 22.

¹⁰⁵¹ Smith, Book IV Chapter II, 593. Note that 'individuals' are to be understood as consumers, whilst industry equal 'producers'.

¹⁰⁵² For more information on the concept of choice, see also Behrens, 3–34.

¹⁰⁵³ Doctorow Cory, 'Tech Monopolies and the Insufficient Necessity of Interoperability' (*Locus Magazine*, 5 July 2021) <<https://locusmag.com/2021/07/cory-doctorow-tech-monopolies-and-the-insufficient-necessity-of-interoperability/>> accessed 27 December 2023.

Instead, it is a matter of self-determination, which “isn’t about the superficial desire for a different shade of blue, or about moving your desktop menu icon from the top right corner to the bottom left – it’s about you (and not a corporate exec) having the final say over how you live your life.”¹⁰⁵⁴ Accordingly, self-determination is “the right for individuals and communities to make up their own minds about how they work and live, based on democratic principles rather than corporate fiat.”¹⁰⁵⁵

In the context of killer acquisitions, this is particularly important to understand as by allowing incumbents to acquire potential future competitive or disruptive threats in the name of efficiency, consumers are deprived of choice between undertakings that could potentially have arisen in the absence of the transaction. Instead, they are increasingly locked into large companies’ silos,¹⁰⁵⁶ sometimes without even knowing this is the case.¹⁰⁵⁷ In turn, this raises the question of how freedom to compete can be maintained so that the freedom of choice between different undertakings can be guaranteed for consumers.

c) *Adopting a More Polycentric Notion towards Innovation*

A way to more effectively protect innovation competition in the future would be to adopt a more polycentric notion towards innovation.

aa) *The Concept of Polycentricity*

The concept of polycentricity is not new but was pioneered by Polanyi in the 1950s. He argued that the success of science is primarily due to its polycentric organisation. Polycentric organisation refers to an organisational system that is featured by the interaction of various participants that are free to make autonomous and decentralised decisions and structure their research activities in a way they consider best to solve a given problem.¹⁰⁵⁸ According to

¹⁰⁵⁴ *ibid.*

¹⁰⁵⁵ Doctorow Cory, Twitter Post (Twitter, 10 July 2021) <<https://twitter.com/doctorow/status/1413908283673489409>> accessed 27 December 2023.

¹⁰⁵⁶ See also Doctorow Cory, “Technological self-determination: Competition is a means, not an end.” (Doctorow Medium, 7 July 2021) <<https://doctorow.medium.com/technological-self-determination-da7a04952fa>> accessed 27 December 2023.

¹⁰⁵⁷ Due to the grid of intertwined products and services that certain incumbents offer, it is often intransparent to what company a product or service belongs.

¹⁰⁵⁸ Polanyi (1951), 34–36; see also Ostrom, Tiebout and Warren, 831, who find that “[p]olycentric” connotes many centers of decision-making which are formally independent of each other. Whether they actually function independently, or instead constitute an interdepend-

him, “[s]elf-coordination of independent initiatives leads to a joint result which is unpremeditated by any of those who bring it about. Their coordination is guided by an “invisible hand” toward the joint discovery of a hidden system of things. Since its end-result is unknown, this kind of co-operation can only advance stepwise, and the total performance will be the best possible if each consecutive step is decided upon by the person most competent to do so[...]. Any attempt to organize the group [...] under a single authority would eliminate their independent initiatives and thus reduce their joint effectiveness to that of the single person directing them.”¹⁰⁵⁹ Following this idea, scientific progress ought to be viewed as the outcome of an evolutionary process of trial and error whereby various individuals interact freely.¹⁰⁶⁰

This understanding of innovation is also largely shared by Hayek.¹⁰⁶¹ He highlighted the importance of decentralised knowledge creation by arguing that competition should be regarded as a ‘discovery procedure’ whose final outcome—the so-called ‘spontaneous order’—cannot be anticipated. The competitive process, therefore, requires a decentralised, polycentric system in which companies can try different solutions and, based on the feedback of the market, find out which products and services are the superior ones.¹⁰⁶²

bb) Application to Killer Acquisitions

In the context of killer acquisitions, the adoption of a more polycentric understanding of innovation would allow the European Commission to move away from its current rather outcome-oriented assessment of innovation and more strongly emphasise the importance of its evolutionary process, thereby focus-

dent system of relations, is an empirical question in particular cases. To the extent that they take each other into account in competitive relationships, enter into various contractual and cooperative undertakings or have recourse to central mechanisms to resolve conflicts, the various political jurisdictions in a metropolitan area may function in a coherent manner with consistent and predictable patterns of interacting behavior. To the extent that this is so, they may be said to function as a “system.”

¹⁰⁵⁹ Polanyi (1962), 55.

¹⁰⁶⁰ Kerber (2011), 173.

¹⁰⁶¹ Note that he was a leading economist of the Austrian School. For more information on the Austrian School, see Huerta de Soto.

¹⁰⁶² Hayek (2002), 9 et seq.; see also Hayek (1945), 519–530, where he argued that a process of decentralised information processing is superior to centralised information processing, which can be traced back to the fact that the former has a greater capacity of collecting and processing information than a central planning authority. Note that whilst Hayek found that the concept of social justice is meaningless and therefore proclaimed the superiority of the market system, Polanyi raised concerns that the market system would conflict with certain religious/secular moral values.

ing its competition policy on the preservation of the independency of innovative market players. In fact, by taking into account the full dimension of innovation that goes beyond the output and price effects and instead includes considerations of innovation diversity and direction,¹⁰⁶³ the Commission could better account for the complicated web of independent relationships featuring innovation.¹⁰⁶⁴

Such an understanding of innovation seems particularly valuable in light of Arthur's findings, according to which all technologies consist of parts of other technologies that are organised into a new system. In short, he finds that innovations are the result of existing technologies that have been recombined.¹⁰⁶⁵ In this context, Baldwin and Clark mention that the computer industry has enjoyed considerable growth by embracing modularity and subsystems that were organised in new ways.¹⁰⁶⁶ Accordingly, protecting the independent growth of nascent companies with a large innovation potential—irrespective of whether they operate in the same relevant market—also allows other market players to benefit from their findings, which may eventually enable them to recombine the technologies in ways that can result in improved or even completely novel products and services. Creating a legal framework that considers competition as an 'innovation procedure' by stimulating the growth of various smaller innovations fosters innovation diversity and contributes to enhancing knowledge across the industry. Eventually, it may lead to a range of technologies that would not have been achieved otherwise.¹⁰⁶⁷

At the same time, the introduction of a more polycentric understanding of innovation competition in merger control requires a more holistic analysis of M&A; one that allows the Commission to better account for the complex interactions between various agents across the industry.¹⁰⁶⁸ Put differently, the competitive assessment needs to be framed in a way that gives greater appreciation to the evolutionary process of innovation as opposed to its outcome, i.e., takes more account of the unpredictability and, thus, complexity

¹⁰⁶³ See Lianos, 183–184.

¹⁰⁶⁴ See also Fuller, who elaborated on the question of what polycentric problems are, finding that they comprise a complex web of interdependent relationships where a change in one factor leads to various changes in other factors.

¹⁰⁶⁵ In his book, Arthur explains in detail why innovation is an evolutionary process, see Arthur (2009), 11 et seq.

¹⁰⁶⁶ See Baldwin and Kim, chapter 6.

¹⁰⁶⁷ Cohen and Klepper, 7.

¹⁰⁶⁸ Foster, 873; see also similarly Lianos, 172.

of innovation and competition.¹⁰⁶⁹ To achieve such a comprehensive analysis, the Commission may want to reconsider its current analytical framework and adopt a more complexity-oriented economic basis, which links directly to the next subsection.

2.3. Viewing Merger Control through the Lens of Complexity Theory

Having established that the assessment of innovation competition should be applied in a more polycentric manner in order to effectively tackle killer acquisitions in the future, this subsection analyses how complexity science could provide useful insights to create a more comprehensive merger control framework.¹⁰⁷⁰

a) *Main Idea*

Complexity science is part of seeks to explain “how larger systems and their occupants, including industries and firms, evolve and compete against one another over time through adaptation, coevolution and other dynamic processes.”¹⁰⁷¹ It analyses “how elements interacting in a system create overall patterns, and how these patterns, in turn, cause the elements to change or adapt in response.”¹⁰⁷² Accordingly, the main idea behind complexity science is to understand systems of interdependent actors that behave and interact in a non-linear manner.

b) *Complexity Economics*

Whilst, in its early days, complexity science was primarily used in the analysis of biological systems,¹⁰⁷³ its scope of application has increasingly broadened over the past decades.¹⁰⁷⁴ Ever since the late 1980s, it has also gained momen-

¹⁰⁶⁹ Note that such an approach has also been discussed in evolutionary economics. In a nutshell, evolutionary economics applies concepts of biology to socio-cultural phenomena. It considers that market competition ought to be seen as a process of parallel experimentation competition processes and should therefore be viewed as an evolutionary process of variation and selection. For more information, see Nelson and Winter; Cantner, 149–172; Kerber (2006), 457–463; Kerber (2011), 173–201; Foster and Metcalf, 1–16.

¹⁰⁷⁰ See [Part I: Chapter 3: C. 3.2.b](#).

¹⁰⁷¹ Gundlach, 18.

¹⁰⁷² Arthur (2021), 136.

¹⁰⁷³ See, for instance, Solé and Goodwin.

¹⁰⁷⁴ Gundlach, 18.

tum in economics, where it seeks to address highly complex phenomena that cannot be measured through more traditional economic theories, such as the neo-classical economic theory.¹⁰⁷⁵

Complexity economics departs from the idea that every agent is different and that companies operating in novel markets have various technologies, motives and resources, raising substantial uncertainties as to who their rivals will be and how other companies in the industry will behave in the future. Based on these observations, complexity economists assume that agents have imperfect information and are exposed to constant uncertainty. Hence, agents try to make sense of complex situations, thereby constantly adapting and changing their behaviour based on the outcome they mutually bring about. By portraying the economy as a continuously evolving process—and not as a predictable process like the neo-classical economic theory¹⁰⁷⁶—complexity economics seeks to be closer to economic reality, i.e., closer to how the economy actually works.¹⁰⁷⁷

c) *Complexity Science in Competition Law*

With the rise of the digital era, the application of complexity science has also been marginally discussed in the context of competition law.¹⁰⁷⁸ Although, to date, the complexity theory has not been explicitly deployed to competition law,¹⁰⁷⁹ its fundamental ideas may be useful in designing a more effective as-

¹⁰⁷⁵ Arthur (2021), 136. A very interesting podcast about the ‘history’ of complexity economics is provided by Brian Arthur in the Podcast ‘The Economy and Complexity Science: Part I’ (Simplifying Technology, December 2022) <https://open.spotify.com/episode/5lxNQvL-LVGA66pDAfmNv6U?si=0cXA_AZSJWoy4KsbGe3iw&utm_source=whatsapp&nd=1> accessed 27 December 2023.

¹⁰⁷⁶ For more information regarding the neo-classical economic theory, see [Part I: Chapter 3: C. 3.2.b\)](#).

¹⁰⁷⁷ See Arthur (1999), 107–109; Arthur (2021), 137.

¹⁰⁷⁸ See, for instance, Gundlach, 17–30; Gundlach and Foer, 1–15; Horton, 195–214; Petit and Schrepel, 1–30.

¹⁰⁷⁹ Petit and Schrepel, 9. Note, however, that, unlike complexity economics, the application of evolutionary economics to competition law has been more widely discussed and has also partially become part of the mainstream literature, see, for instance, Cantner, 149–172; Kerber (2006), 457–463; Kerber (2011), 173–201. The main difference between evolutionary economics and complexity economics is that they focus on different perspectives: evolutionary economics looks at the continuity of novelty-driven evolutionary change, whereas complexity economics concentrates on the structure-focused systemic aspects of the knowledge-based economy. However, apart from their analytic focus, the two approaches are very similar and, as stated by Dopfer, “they represent only two variations of a common

assessment of killer acquisitions in digital markets. This is because the application of complexity science would allow competitive interactions to be viewed as going beyond the traditional concept of relevant markets, i.e., enable enforcers to better consider competition that arises at different levels of a competition system, most notably on the industry level, where companies operate in related activities, and the market level, where competition occurs within a market.¹⁰⁸⁰ Even though these levels are already considered in the neo-classical economic theory and, as will be discussed in the following subsection, the importance of their interconnectedness has also been recognised by the European Commission in the *Google Android* decision,¹⁰⁸¹ the complexity theory could provide a particularly useful basis for the merger control assessment to more effectively account for how these levels may impact each other.

aa) *Google Android Case*

In a nutshell, in the *Google Android* case, the Commission had to assess whether Google abused its dominant position by imposing device manufacturers wishing to install Google's proprietary apps, such as the Play Store, the search engine or the Chrome browser, a set of anti-competitive restrictions. To do so, the Commission defined separate markets for (i) licensable smart mobile device operating systems, (ii) Android app stores, (iii) general search services and (iv) non-OS-specific mobile web browsers.¹⁰⁸² It, however, also recognised that these markets are interconnected, allowing firms to exert competitive constraints even if they are not necessarily operating in the same product markets. More precisely, the European Commission established that irrespective of the market definition, it is crucial to establish whether Apple and the iOS ecosystem sufficiently constrain Google and the Android ecosystem. It concluded that this is not applicable to the present case and found Google to be dominant in all aforementioned markets except for the market for non-OS-specific mobile web browsers.¹⁰⁸³

theme: the evolving complexity of knowledge as it relates to economic operations." Dopfer, 6.

¹⁰⁸⁰ A more comprehensive discussion on the multi-level analysis in competition law in the context of complexity theory is offered by Petit and Schrepel, 9–11.

¹⁰⁸¹ Commission decision of 18 July 2019, Case AT.40099 – *Google Android*. Confirmed by the General Court in Case T-604/18 *Google and Alphabet v Commission (Google Android)*.

¹⁰⁸² Commission decision of 18 July 2019, Case AT.40099 – *Google Android*, paras. 210 et seq. and 431 et seq. The definition of the geographic market will not be further discussed as it is not considered relevant to the discussion here. For more information, see paras. 400 et seq.

¹⁰⁸³ *ibid*, paras. 497 et seq.

The approach taken by the European Commission was confirmed by the General Court, finding that the concept of competitive pressure must indeed be interpreted broadly and may require “multi-level or multi-directional examination in order to determine the fact and extent of the various competitive constraints that may be exerted on that undertaking”¹⁰⁸⁴. To this end, the General Court distinguished between ‘internal competitive restraints’ that are specific to the relevant market and ‘external competitive restraints’ that are exerted by products occurring outside the relevant market.¹⁰⁸⁵ It specified that, in the context of digital ecosystems, both types of competitive restraints need to be considered, and relevant markets can therefore not “be artificially separated in so far as they all had complementary aspects” and require a comprehensive analysis.¹⁰⁸⁶ Following the Commission’s view, the General Court concluded that there is insufficient competition between Apple/iOS and the Google/Android ecosystem and that the external competitive constraints arising from products of other ecosystems are not strong enough to smoothen Google’s dominant position.¹⁰⁸⁷

bb) *Application to Killer Acquisitions*

This case shows that both the European Commission and the General Court have recognised the importance of considering the interconnectedness of different levels of the market in the context of digital markets. This development is generally highly welcome and particularly important in the context of killer acquisitions since, as established in Part II, whilst a transaction may be viewed pro-competitive on the market level, it may have anti-competitive effects on the industry level.¹⁰⁸⁸

Transferring the approach taken in *Google Android* to killer acquisitions, however, still comes with the problem that the European Commission departs from the traditional market definition, which, as explained above, is highly challenging to ascertain in cases in which a nascent company is involved.¹⁰⁸⁹ Moreover, given that *Google Android* is a market dominance case and does not include a merger control analysis, it does not solve the problem that the current analytical framework relies on the distinction between horizontal and non-horizontal transactions, the challenges of which were highlighted in

¹⁰⁸⁴ Case T-604/18 *Google and Alphabet v Commission (Google Android)*, para. 117.

¹⁰⁸⁵ *ibid.*, para. 109.

¹⁰⁸⁶ *ibid.*, para. 126.

¹⁰⁸⁷ *ibid.*, para. 270.

¹⁰⁸⁸ This was discussed in more detail in [Part II: Chapter 2: D. 2](#) and [Part II: Chapter 2: D. 3](#).

¹⁰⁸⁹ See [Part III: Chapter 1: C. 1](#).

Part III.¹⁰⁹⁰ In short, the approach taken in this case does still not solve the challenges that the underlying framework of the current EUMR poses to the assessment of killer acquisitions.

To counter these challenges, the European Commission may need to redesign its framework in a way that views competition as going beyond rivalry. To this end, it could extend its understanding of competition to the broader goal of fostering uncertainty.¹⁰⁹¹ Uncertainty thereby refers to situations where the probabilities of future states are not known.¹⁰⁹² From a complexity theory's perspective, promoting uncertainty beyond the market level plays a crucial role as the more uncertainty prevails in an industry, the more complex it is for companies to make sense of other companies' behaviour. In turn, this increases the chance that companies start working under these uncertainties by diversifying, exploring and innovating.¹⁰⁹³ This may, as a result, lead to unexpected, random changes.¹⁰⁹⁴ In the context of innovation, the occurrence of random events is highly welcome as they trigger positive feedback loops, which in turn foster technological changes, such as the emergence of innovative business models or new products and services.¹⁰⁹⁵ Accordingly, the presence of uncertainty benefits innovation on a broad scale.

To design an analytical framework that more strongly promotes uncertainty beyond the relevant market, the European Commission needs to shift its understanding of competition more strongly to uncertainty and complexity. This would lead to the following paradigm shift.¹⁰⁹⁶

¹⁰⁹⁰ See [Part III: Chapter 1: C. 4.1.c](#).

¹⁰⁹¹ Note that uncertainty is an essential characteristic of innovation. For more information, see, for instance, Knight who, among other things, reflects on how innovation creates uncertainty.

¹⁰⁹² Knight explicitly distinguishes uncertainty from risk, the latter of which refers to a situation where the probabilities of different future states are known. For more information on this distinction, see Knight, chapter VII.

¹⁰⁹³ Petit and Schrepel, 12.

¹⁰⁹⁴ *ibid.*, 14. They note that random events are not to be confused with events that occur by chance. Instead, random events are usually known facts that can lead to different possible outcomes all equally likely. In this regard, Petit and Schrepel also refer also to Bergman Aviv, 'Aviv Bergman on The Evolution of Robustness and Integrating The Disciplines' (*Complexity Simplecast*, 18 July 2022) <<https://complexity.simplecast.com/episodes/88>> accessed 27 December 2023.

¹⁰⁹⁵ Petit and Schrepel, 14.

¹⁰⁹⁶ *ibid.*, 18. Note, however, that the figures are the author's own idea.

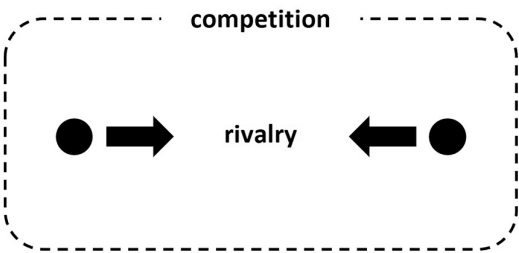


Figure 2: Competition Paradigm under the Neo-Classical Economic Theory

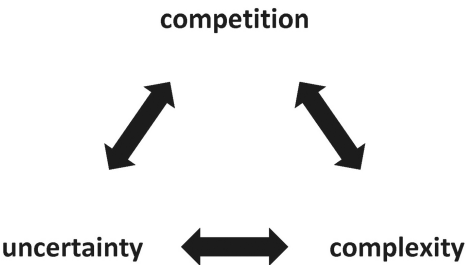


Figure 3: Competition Paradigm under the Complexity Theory

According to this new paradigm, uncertainty promotes complexity, which in turn can also foster competition, and vice versa. Competition (as in rivalry) is therefore only one component to be considered.

Drafting a framework on this paradigm would encourage the European Commission to continue its path taken in the *Google Android* case and allow it to transfer its idea of conducting a multi-level or multi-directional examination to merger control. In fact, it would allow it to come away from the current framework of defining relevant markets and distinguishing between horizontal and non-horizontal transactions and more generally consider whether a transaction could lead to a significant reduction in uncertainty by more accurately taking into account any sort of competitive interactions in the broader sphere of the economy. In turn, it would also enable the Commission to foster innovation diversity and innovation direction by better recognising strategies

that are aimed to work against uncertainty and thus could also reduce complexity and competition in the long run—practices that are commonly applied by established companies to keep their status quo.

It should be stressed that, as already pointed out above, putting greater emphasis on uncertainty and complexity does not mean that competition as in rivalry does not play a role anymore. On the contrary, rivalry remains a great indicator of uncertainty and generally increases uncertainty and complexity. The main difference to the existing approach taken in merger control is that by coming away from thinking in markets and rivalry, the severity of certain transactions that may not exhibit a horizontal overlap can be better taken into account, which allows for a more comprehensive analysis of the facts that is closer to reality. How exactly the European Commission could implement such an approach will be explained in the following two sections.

3. Proximity Assessment

Based on the aforementioned findings, this section seeks to create a new framework that is closer to economic realities and allows the European Commission to better assess killer acquisitions occurring in digital markets. To this end, it suggests the introduction of the proximity assessment, which—as the name implies—aims to identify the closeness of the nascent firm’s innovation to the incumbent’s core technology by analysing its interconnectedness with the technological network surrounding the acquirer’s core technology. It should be stressed that the proximity assessment does not establish whether a transaction causes harm. Instead, it merely constitutes the basis for the legal analysis, which will be introduced in the subsequent section.¹⁰⁹⁷ The only objective of the proximity assessment is to inform the European Commission about whether the merging firms operate in close proximity.

3.1. Important Definitions

At the outset, it is important to define the main pillars of the proximity assessment.

¹⁰⁹⁷ See [Part IV: Chapter 1: C. 4.](#)

a) *Technological Networks*

The proximity assessment relies on technological networks. This means that it focuses on relations among the technologies of various actors operating across an industry. Within the proximity assessment, the actors are represented by different companies and their products and services, respectively. These actors are viewed to be “embedded within networks of interconnected relationships that provide opportunities for and constraints on behavior.”¹⁰⁹⁸ The word ‘network’ thereby refers to “a set of nodes and the set of ties representing some relationship, or lack of relationship, between the nodes.”¹⁰⁹⁹

Within this thesis, the analysis of the technological network serves as an instrument to consider the effects of micro-level interactions on macro-level patterns in digital markets. Put differently, by relying on technological networks, the proximity assessment seeks to create a framework that allows the European Commission to better understand the closeness of the start-up’s innovation to the incumbent’s technology by looking at how it is interrelated with the various actors operating in the technological network surrounding the incumbent.

It should be highlighted that this thesis deliberately chooses to look at technological networks and not ecosystems. This is because compared to the economic understanding of ecosystems,¹¹⁰⁰ networks are broader as they are not characterised by a common value proposition that is orchestrated by a single pivotal player.¹¹⁰¹ Unlike Adner’s understanding of ecosystems, companies operating in a technological network are therefore not necessarily “partners that need to interact in order for a focal value proposition to materialize.”¹¹⁰²

b) *Technological Spaces*

According to the proximity assessment, every technological network is characterised by various technological spaces. Technological spaces, as understood within this thesis, are the sum of the buyers and sellers that are active in the same business area. The proximity assessment deliberately refrains from adopting the term ‘markets’ because, as established in Part III, markets in com-

¹⁰⁹⁸ Brass et al., 795.

¹⁰⁹⁹ *ibid.* For more information on the network theory, see, for instance, Parkhe et al., 560–568; Lechner, Frankenberger and Floyd, 865–889.

¹¹⁰⁰ For more information on ecosystems, see [Part I: Chapter 1: F. 3.](#)

¹¹⁰¹ For more information on ecosystem orchestrators, see [Part I: Chapter 1: F. 4.](#)

¹¹⁰² Adner (2017), 40.

petition are constrained to companies that offer substitutable products or services.¹¹⁰³ Given that in the context of killer acquisitions, it has been found that this understanding of markets is not conclusive,¹¹⁰⁴ the proximity assessment, as well as the subsequent legal test, will refer to technological spaces.

c) *Core Technology*

The proximity assessment departs from the assumption that the incumbent's core technology constitutes the 'centre' of the technological network. The term 'core technology' thereby refers to the technology which constitutes the incumbent's core business. For instance, Meta's core technologies include its platforms Facebook, WhatsApp and Instagram, whereas Alphabet's primary line of business is its search engine. Large platforms can have various core technologies; in the context of the proximity assessment, the Commission should focus on the technology that is the most relevant in the context of the case.

3.2. Objectives

The proximity assessment aims to analyse the proximity of the target's innovation by looking at the interconnectedness of its innovation with the incumbent's technological network surrounding the large company's core technology. To this end, it does not rely on substitutability—as is done in the current market definition¹¹⁰⁵—but seeks to assess the closeness of the start-up's innovation to the technological network in which the incumbent operates. By doing so, the proximity assessment tries to create a more encompassing analysis that goes beyond the relevant market and encompasses competitive aspects occurring on the market and the industry level.

3.3. Features

The assessment of the interconnectedness is featured by the following characteristics:

¹¹⁰³ The understanding of the term 'market' is further explained in the Market Definition Draft, para. 17.

¹¹⁰⁴ [Part III: Chapter 1: C. 1.](#)

¹¹⁰⁵ For the assessment of the relevant market, see [Part III: Chapter 1: C. 1.1](#). For more information on the challenges of the assessment of substitutability in digital markets, see [Part III: Chapter 1: C. 1.2.b](#)).

First, it is purely a qualitative assessment. The reason for not applying any quantitative methods is that, as explained in Part III, quantifying innovation is very difficult, if not impossible.¹¹⁰⁶

Secondly, the assessment is exclusively based on the analysis of the closeness of the merging parties' technologies, i.e., on the closeness of their technological functionalities. It is important to mention that besides considering the status quo of technological characteristics, the assessment also includes a forward-looking exercise of the intended use of the target's innovation. It, therefore, takes into account any evidence pointing to the outer potential of the target's technology.

Thirdly, unlike the traditional market definition, the proximity assessment does not aim to define market boundaries; it merely focuses on the assessment of the interconnectedness of the merging parties. To this end, it departs from the assumption of a global geographic network. This is because it is usually impossible to define the future geographic reach of the target's innovation at the time of the transaction. In fact, this is also reflected in the *Illumina/Grail* case in which the European Commission blocked the merger between these two companies despite Grail and its competitors not (yet) being active in the EU. Accordingly, in this case, the European Commission assumed that if the companies in question eventually succeeded in developing a revolutionary cancer detection test, they would likely also sell them within the EU¹¹⁰⁷—an assumption that seems reasonable to make in the context of killer acquisitions.

3.4. Rationale

Having established the most important features of the proximity assessment, this subsection explains the rationale behind the proximity assessment in more detail. To this end, it uses the Milky Way as a metaphor—the galaxy in which planet Earth exists.

In short, the Milky Way consists of billions of stars and, like most larger galaxies, is characterised by a supermassive black hole, whose gravity is more than a million times stronger than the sun. Everything that comes close to this hole

¹¹⁰⁶ [Part III: Chapter 1: C. 1.2.b\)aa](#)).

¹¹⁰⁷ Landman, 59. See also EC, 'Mergers: Commission prohibits acquisition of GRAIL by Illumina' (EC Press Release, 6 September 2022) <https://ec.europa.eu/commission/press-corner/detail/en/ip_22_5364> accessed 27 December 2023.

is pulled in,¹¹⁰⁸ including stars that wander too close to it.¹¹⁰⁹ The black hole may also often snack on asteroids¹¹¹⁰ which fly too close to it.¹¹¹¹ It should also be said that besides the Milky Way, there exist trillions of other galaxies in the universe, all featured with unique traits and all cruising through space.¹¹¹²

Transferred to the proximity assessment, the technological network surrounding the incumbent's core technology is equivalent to the Milky Way. Accordingly, for the purpose of this thesis, the Milky Way will be referred to as the incumbent's network. The incumbent's network is surrounded by thousands of other technological networks, which are all characterised by their own features—as is the case with galaxies. However, they all have in common that they are characterised by the presence of thousands of stars that equal the products or services of various companies operating within their network. The centre of the incumbent's network is featured by a black hole, which represents the incumbent's core technology and forms the 'centre' of gravity. In the proximity assessment, gravity is thereby measured by the interconnectedness of the target company's innovation with the incumbent's network. Accordingly, the higher the interconnectedness of the start-up with the incumbent's network, the more likely it will get pulled in by the incumbent operating at the centre of the network. This is because, in such cases, the incumbent wants to control the threat rather than letting it 'fly' around independently, which could potentially weaken its position in the technological network.

This links directly to the target company, which, in the proximity assessment, equals an asteroid. This is because it holds the potential to damage existing technologies or, depending on its innovation potential, even render them obsolete. At the same time, the closer the start-up's innovation passes to the in-

¹¹⁰⁸ NASA, 'What Is a Galaxy?' (NASA Science, 13 July 2022) <<https://spaceplace.nasa.gov/galaxy/en>>; Craig Freudenrich, 'Just How Many Galaxies Are in the Universe?' (HowStuffWorks, 8 November 2023) <<https://science.howstuffworks.com/dictionary/astronomy-terms/galaxy.htm>> both accessed 27 December 2023.

¹¹⁰⁹ Jet Propulsion Laboratory, 'NASA Gets Unusually Close Glimpse of Black Hole Snacking on Star' (Jet Propulsion Laboratory, December 2020) <<https://www.jpl.nasa.gov/news/nasa-gets-unusually-close-glimpse-of-black-hole-snacking-on-star>> accessed 5 March 2023.

¹¹¹⁰ Asteroids are small, rocky objects.

¹¹¹¹ For more information on asteroid, see, for instance, Jourdan Fred, 'Our Solar System is filled with asteroids that are particularly hard to destroy, new study finds' (Modern Science, 8 February 2023) <<https://modernsciences.org/our-solar-system-is-filled-with-asteroids-that-are-particularly-hard-to-destroy-new-study-finds/>> accessed 27 December 2023.

¹¹¹² For more information on the different types of galaxies, see NASA, 'Galaxies' (NASA) <<https://universe.nasa.gov/galaxies/types/>> accessed 27 December 2023.

cumbent's core technology, i.e., the more of a threat it poses to it, the higher the likelihood that the start-up is being acquired by the incumbent. Once acquired by the incumbent, it allows the latter to either terminate the start-up's innovation or its own technology or change the nascent company's trajectory in a way that favours it best, thereby averting the threat at an early stage.¹¹¹³

It should be specified that this example does by no means mean that the incumbent may not be interested in acquiring companies that are farther away from their core technology, i.e., that exhibit only low interconnectedness with the incumbent's technological network. Given the lower interconnectedness with the incumbent's network, it is, however, less likely that the start-up concerned is bought because of the threat it poses but rather because the incumbent seeks to expand to another technological network. Accordingly, such transactions follow another rationale and require a different legal test, which will be further specified below.¹¹¹⁴

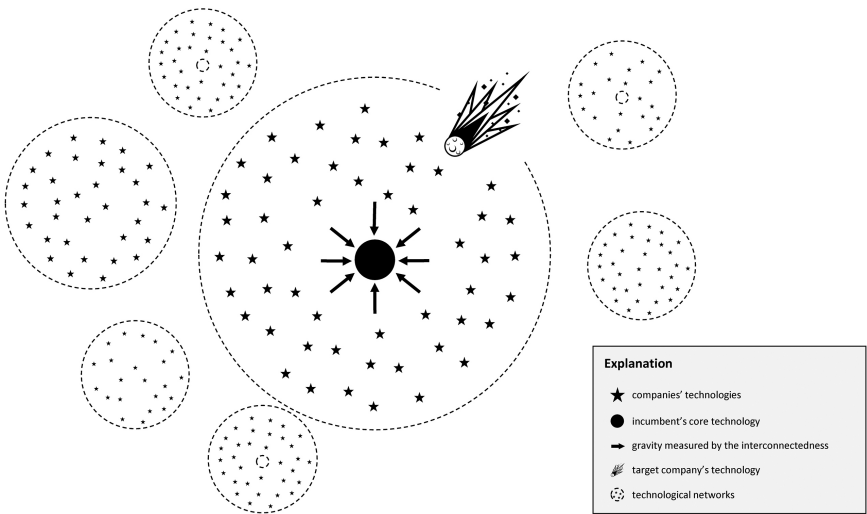


Figure 4: Metaphor for the Proximity Assessment

¹¹¹³ This does not correspond to how real galaxies work but merely serves to illustrate the example.

¹¹¹⁴ [Part IV: Chapter 1: C. 4.](#)

3.5. Different Steps of the Assessment

To operationalise the proximity assessment, the following steps are suggested:

The starting point of the assessment is to define the incumbent's core technology relevant to the case. If the incumbent has several core technologies, the European Commission should focus its analysis on the core technology that is most relevant to the transaction.

Having identified the incumbent's relevant core technology, the Commission should, in a second step, map out the network around this technology, i.e., analyse the various technologies spaces surrounding it whilst considering the various companies operating in these spaces. The outer limits of the technological network depend on the facts of each case. The European Commission should focus on the technological spaces relevant to the acquisition in question.

Once having defined the technological network with the various technologies surrounding it, the Commission shall, in a third step, analyse the nascent company's innovation. To this end, it must objectively ascertain the functionalities of the start-up's innovation, i.e., consider its main characteristics and intended use. Thereby, it is of paramount importance that the Commission looks beyond the status quo and takes into account the outer limits of the potential of the nascent firm's innovation; that is, whether it finds evidence of what the technology could become in the future instead of only focusing on what it is at the moment of the transaction. This is particularly important in killer acquisition cases where the potential of the nascent company is usually still to be fully developed and where the acquisition may take place exactly due to that potential that needs to be exploited. Accordingly, the Commission needs to consider the internal documents of the merging companies, like investment and expansion strategies, as well as entry plans. Also, the consultation of internal documents of the companies operating in close proximity to the start-up may reveal crucial information and enable the Commission to gain better insight into the importance of the start-up's technology as viewed by other players.¹¹¹⁵ Moreover, questioning the author(s) of the internal documents and other employees, as well as consulting the views of market analysts, could contribute to getting a better picture of the potential motives of the transactions and provide valuable insights on anticipated developments.¹¹¹⁶

¹¹¹⁵ See Case COMP/M.7932 – Dow/DuPont, para. 43.

¹¹¹⁶ See OECD (2020a), 26.

In a fourth and final step, the Commission must assess whether and how the nascent company's innovation could be interlinked with the technological network in which the incumbent is active. This serves to understand how it could fit into the incumbent's acquisition strategy. In other words, the Commission needs to ascertain what role the start-up's innovation could play for the technological network in the future by establishing how it could be interconnected with the various players.

To sum up, the proximity assessment consists of roughly four steps:

- 1) Defining the incumbent's core technology relevant to the transaction.
- 2) Establishing the technological network around the incumbent's relevant core technology, i.e., consider how it is interlinked with other technological spaces and their respective players.
- 3) Objectively assessing the functionalities of the nascent firm's technology whilst establishing whether there is evidence pointing towards how the innovation may evolve.
- 4) Analysing the potential interconnectedness of the nascent company with the technological network in which the incumbent is active.

The more interconnected the Commission finds the merging parties to be, the higher their proximity and the more likely it is that the start-up is acquired precisely because of its closeness to its core technology. The examples below should help illustrate this complex exercise.

3.6. Examples

The following examples aim to demonstrate how the proximity assessment works. Note that the examples below are purely fictive and that real VR markets remain out of consideration. They only serve the purpose of illustrating how the European Commission can ascertain proximity. Moreover, it should be highlighted that these examples are highly simplified and pursue the only purpose of specifying the theory above. In general, it is up to economists to elaborate further on the proximity assessment.

a) Scenario 1

This scenario looks at the merger between the two companies SparkVue and SmartAnima, which was notified to the European Commission by the French competition through Art. 22 EUMR. It seeks to illustrate a scenario in which close proximity would be approved.

aa) Facts

SparkVue's core technology is smart glasses, i.e., it is active in the smart device technological space. It was one of the first players to possess this technology and has ever since focused on expanding its range of products and services around it. Accordingly, apart from being active in this space, it is also active in various other VR/AR technological spaces, such as health, fitness, film, gaming, advertisement, e-commerce, social media and distribution. It is well-known that the company's aspiration is to expand its existing ecosystem in this field.

SmartAnima, on the other hand, is a nascent technology start-up that has developed software for an app that allows users to scan written texts and transforms them into VR cartoon pictures. For now, the technology is exclusively used for educational purposes and is primarily applied to the education of children. The start-up was, however, only launched two years ago. Internal documents and various expert inquiries have revealed that its technology has great potential to turn the images created through the app into animated VR stories in the future—a skill that could also be used in other sectors, such as in the gaming or film industry.

bb) Ascertaining Proximity

To assess proximity in the present case, the Commission would first have to ascertain the incumbent's core technology, which, in the present case, is its smart glasses. In a second step, the technological network surrounding its core technology would need to be identified. The main technological spaces to be considered in the present case are health, fitness, film, gaming, advertisement, e-commerce, social media, distribution and, of course, education, where the start-up is currently active. Visual support of the different players operating in the technological network is offered below.

Turning to the target, the Commission would need to analyse the functionalities of its technology. From the facts above, it can be deduced that, as of now, it has developed a scanning software that can transform written texts into VR cartoon pictures. For the moment, it is primarily used for educational purposes to render education more immersive. Therefore, its main target group are teachers, parents and children. Internal documents and expert inquiries, however, reveal that the technology could be further developed so that it can

turn written texts into VR-animated stories, which could also be used in other sectors. Accordingly, its outer potential is turning texts into VR-animated stories.

In a final step, the Commission needs to ascertain where the start-up is positioned in the incumbent's technological network, i.e., analyse its interconnectedness with the various actors in the network. As can be deduced from the visual map below, in the present case, the outer potential of the nascent company's innovation exhibits substantial interconnectedness with the incumbent's technological network and, consequently, would be found to operate in close proximity to the incumbent's core technology. This is because it holds high potential to serve various players across and maybe even beyond the established technological network in the future.

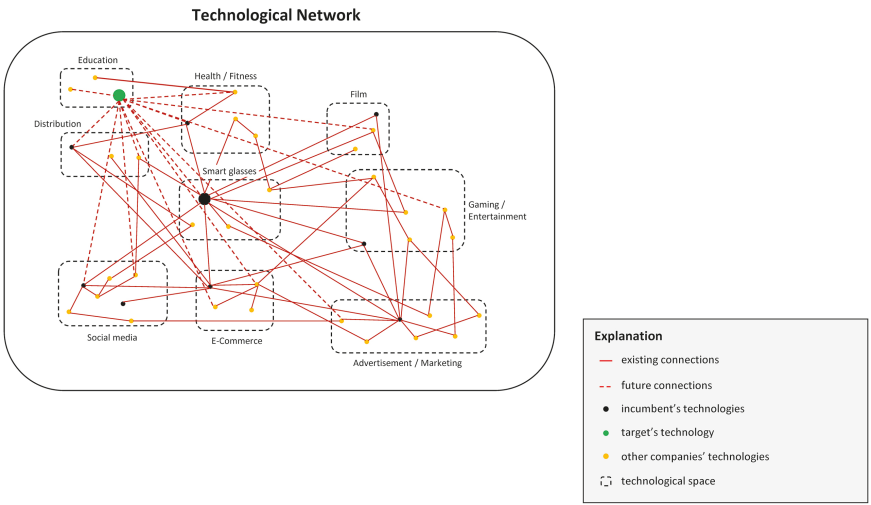


Figure 5: Scenario 1

b) Scenario 2

This example aims to show a scenario in which close proximity is denied.

aa) Facts

The second scenario consists of the same incumbent as in the first scenario: SparkVue. This time, the difference is, however, that the acquirer does not purchase SmartAnima but aims to expand its portfolio by acquiring LoneDrive.

LoneDrive is a nascent firm that has recently launched a technology which can measure distances by using laser lights that bounce off surrounding objects. This allows it to instantly measure precise distances and increase the safety of autonomous cars. It works closely with auto parts manufacturers. Moreover, at the moment, the company also researches how it could combine its technology with VR-powered visual display systems, which may allow drivers to better recognise the autonomous vehicle's surroundings in order to increase their situational awareness. To this end, it also cooperates with ProJect, which is an up-and-coming company that specialises in in-car holography systems that seek to transform how drivers view roads and the environment surrounding them.

bb) Ascertaining Proximity

Given that regarding the incumbent, this scenario departs from the same facts as those applied in Scenario 1, this analysis will skip the first two steps of the assessment, that is, the definition of the incumbent's core technology and of the technological network surrounding it.¹¹¹⁷ It will start directly with the analysis of the target's innovation.

In this case, given that the nascent firm sells a technology that specialises in distance measurement, the nascent company is currently active in another technological network. At the moment, its main target group are auto parts manufacturers as they are interested in buying the start-up's technology. However, the company also researches how its technology could be used with VR-powered visual display systems, which may enable its technology to remotely recognise the autonomous vehicle's surroundings in order to increase drivers' situational awareness. To this end, it cooperates with ProJect, which is an up-and-coming company that specialises in in-car holography systems. As can be seen in the visual map below, LoneDrive exhibits very few connections with the technological network surrounding the incumbent. The interconnectedness would therefore be estimated to be low.

¹¹¹⁷ [Part IV: Chapter 1: C. 3.6.a\)bb\).](#)

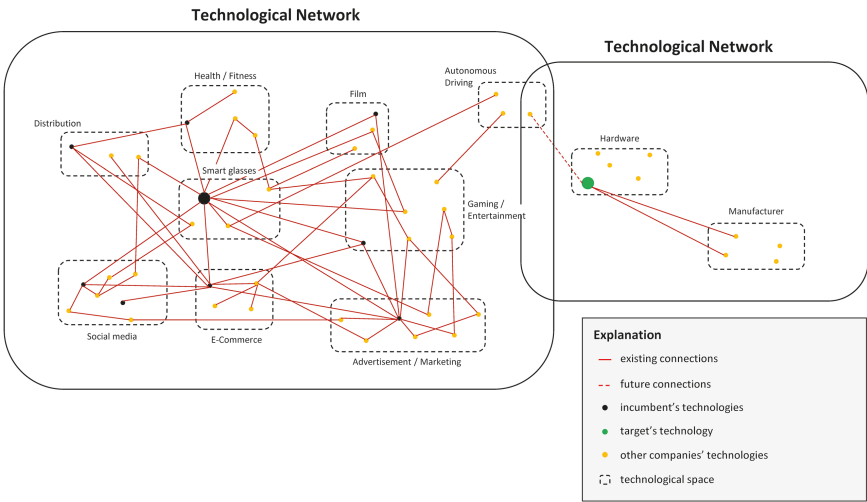


Figure 6: Scenario 2

3.7. Importance of Visual Maps

The aforementioned examples show that, given the complexity that comes along with the assessment of the interconnectedness of various players within the incumbent's technological network, it is particularly important for the Commission to complement this exercise with visual graphs, maps and other images to explain its reasoning, thereby making its proximity assessment more comprehensible, intelligible and, consequently, less prone to criticism. The increased use of visual aids in the Commission's decision would generally be welcome as, besides the advantages just mentioned, it also could contribute to making its judgement shorter and more concise.¹¹¹⁸

3.8. Agent-Based Modelling

In addition to using traditional visual aids, the Commission should also consider the application of computational agent-based models. Agent-based models generally aim to assess complex adaptive systems. They are computer simulations that are based on autonomous, interacting objects, so-called

¹¹¹⁸ For instance, Case COMP/M.7932 – Dow/DuPont consists of 628 pages (without Annex).

‘agents’, and study the interactions between these agents in a certain environment.¹¹¹⁹ Therefore, agent-based models provide an instrument to ascertain the impacts of exposures on outcomes.

In the context of the proximity test, the application of agent-based models could constitute a helpful tool to better understand the interactions between the target company and the various actors operating in the incumbent’s technological network. Indeed, by assessing the dynamic effects of the merger on the development of the different players, it could provide valuable insights into the impacts of the transaction on the web of interaction within the incumbent’s technological network.¹¹²⁰ How exactly such a model would have to be programmed will, however, not be further discussed in this thesis and should be developed by computer scientists and economists.

4. Legal Test Based on the Proximity Assessment

Given that the assessment of proximity alone does not yet establish harm but only serves to understand the interconnectedness of the merging parties with other companies operating within the incumbent’s technological network, the European Commission needs to ascertain, in a second step, whether there are indications of how the transaction could harm innovation and competition. Departing from the proximity assessment, this section will develop a two-tier legal test that could allow the Commission to assess competitive harm more effectively. To this end, it will first introduce the rationales behind the two tests before discussing their individual criteria in more detail.

4.1. Different Rationales of the Test

As stated earlier, the starting point for the legal test is whether close proximity has been found.

a) Affirmation of Proximity

If close proximity is affirmed, this thesis assumes the presence of a ‘narrow killer acquisition’. The primary concerns arising from such transactions are (i) whether the acquirer purchases the nascent firm due to its disruptive potential and, if this is denied, (ii) whether the sustaining innovation could strengthen the incumbent’s position in the technological network. If the in-

¹¹¹⁹ Holland and Miller, 365.

¹¹²⁰ See Arthur (2021), 139.

novation is found to hold neither disruptive potential nor to strengthen the incumbent’s position, the European Commission needs to assess (iii) whether the transaction could allow the incumbent to engage in anti-competitive leveraging strategies and, if not, (iv) compare the three counterfactuals where the incumbent either buys the start-up, enters the market organically or does not enter the market at all. Thereby, the Commission needs to establish the different competitive dynamics of these counterfactuals in order to conclude which counterfactual would be most beneficial for the innovation process.

It should be added that narrow killer acquisitions are generally viewed to be more harmful than wide killer acquisitions as they exhibit higher interconnectedness, which is a valuable indicator that the incumbent is more strongly incentivised to eliminate important sources of uncertainty in order to influence innovation avenues that would have otherwise potentially challenged their position in the technological network. Put differently, in such cases, incumbents are more prone to adversely affect the development of the innovation compared to when the innovation would develop independently.

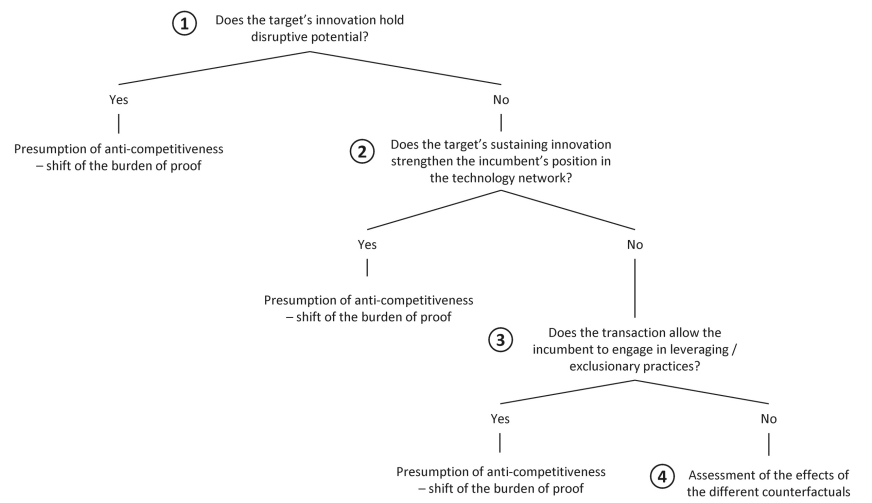


Figure 7: Decision Tree for Narrow Killer Acquisitions

b) *Negation of Proximity*

If close proximity is denied and a so-called ‘wide killer acquisition’ is present, the transaction primarily raises the question of whether it would be more beneficial if the incumbent developed the technology itself as opposed to simply purchasing the start-up’s innovation. The underlying question is, therefore, whether the incumbent’s organic entry would be more beneficial from an innovation-process perspective. The answer to this question thereby largely depends on the structure of the technological space in which the start-up operates or plans to do so in the future. More precisely, it hinges on whether the target operates in an untipped technological space where competitive dynamics are high or whether it is or aims to be active in a tipped space where there is a strong presence of a large incumbent.

aa) *Untipped Technological Space*

If the technological space in which the target is or will be active is not tipped, the European Commission needs to largely follow the same assessment as for narrow killer acquisitions. One difference is that it does not need to examine whether the start-up’s innovation could strengthen the incumbent’s position in the technological space since the merging companies operate in different spaces and exhibit low interconnectedness.

bb) *Tipped Technological Space*

If the Commission finds the technological space to be tipped, the transaction is presumed to have neutral or pro-competitive effects. This is because, as elaborated in more detail below, the incumbent generally has a strong interest in promoting the target’s innovation in order to stand a chance to succeed against the established firm.¹¹²¹ Accordingly, wide killer acquisitions in tipped markets presumably benefit competition and innovation and are therefore viewed as legal.

¹¹²¹ See [Part IV: Chapter 1: C. 4.3.b](#)).

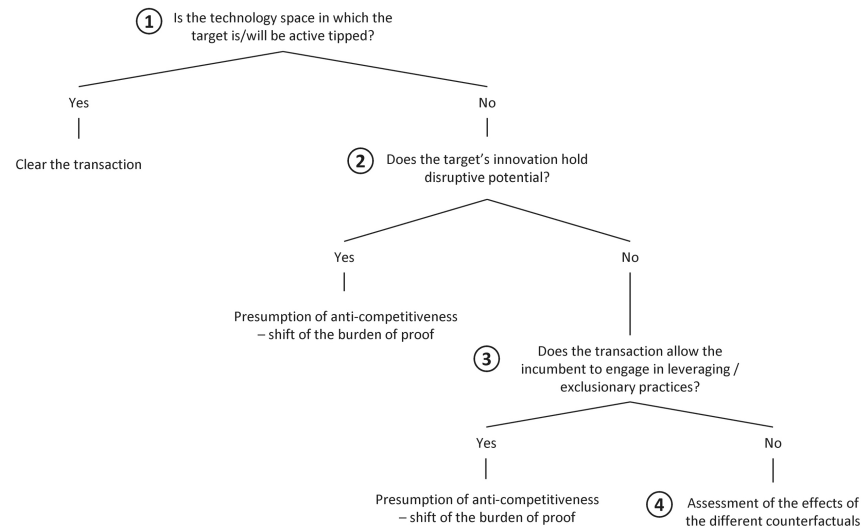


Figure 8: Decision Tree for Wide Killer Acquisitions

4.2. Narrow Killer Acquisitions

When analysing narrow killer acquisitions, the Commission first needs to assess whether the target company holds disruptive potential. After all, the more unique the functionalities of the target company are, the higher the challenges that the nascent firm may become a great threat to the incumbent one day and, consequently, the more uncertainty it may create, making the preservation of its independence highly important.¹¹²² In addition, the more unique the target's innovation, the less likely it is that the uncertainty created through it will be compensated by the entry of an equally innovative firm, as it may not have the same capabilities as the target. Hence, this makes it particularly important to take a closer look at such transactions.

a) Disruptive Potential

To recap, as established in Part I, disruption refers to the process where a smaller firm with fewer resources has the potential to successfully challenge an established incumbent. This is because, by typically focusing on sustaining innovation, incumbents often ignore the needs of certain customers. Entrants

¹¹²² Holmström et al., 19.

that exhibit disruptive potential specifically target these customer segments that are unattractive to incumbents. Nascent firms with disruptive potential, therefore, typically operate in fringe markets, i.e., either in low-end markets or new markets, from where they slowly move upmarket, ultimately offering a service that incumbents' mainstream customers need whilst preserving the advantages that characterised their early success.¹¹²³

According to Christensen, disruptive technology is generally featured by three components: (i) enabling technology, (ii) an innovative business model and (iii) a coherent value network.¹¹²⁴ Hence, when assessing a nascent firm's disruptive potential, the European Commission could ascertain whether these three elements are present or are likely to be so in the future. The following subsections provide some guidance based on Christensen's criteria.

aa) *Enabling Technology*

In the first step, the Commission could assess whether the nascent firm has or is likely to create an enabling technology. In turn, this raises the question of what an enabling technology is in the first place.

Teece establishes that enabling technologies “are discoveries arising from advanced science and engineering activity that allow the creation or improvement of products and services across a wide product scope.”¹¹²⁵ In essence, they are innovations that open up new opportunities and were created beyond generic knowledge. They are characterised by platform-like features and often show strong complementarities with existing and/or new technologies.¹¹²⁶ Moreover, a distinctive feature of enabling technologies is that they make a product or service more affordable or accessible to a large range of consumers.¹¹²⁷ Accordingly, they help customers more easily and effectively do things that they are already doing. Streaming movies is an illustrative example in this regard; consumers watched movies before, but streaming made it even easier for them to do so. Another example is provided by 3D printing; whilst

¹¹²³ [Part I: Chapter 1: D. 3.](#)

¹¹²⁴ Christensen Institute, ‘Disruptive Innovation’ (Christensen Institute) <<https://www.christenseninstitute.org/disruptive-innovations/>> accessed 27 December 2023.

¹¹²⁵ Teece (2017), 1.

¹¹²⁶ *ibid.*

¹¹²⁷ Joan Magretta, ‘Why Business Models Matter’ (Harvard Business Review, May 2002) <<https://hbr.org/2002/05/why-business-models-matter>> accessed 27 December 2023.

all sorts of parts were manufactured before, as stated by D'Aveni, 3D printing “provides an unprecedented ability to customize products and respond quickly to shifts in market demand.”¹¹²⁸

To return to the assessment of killer acquisitions and following this understanding of enabling technology, the Commission needs to analyse whether the innovation in question uses an enabling technology, which may make a product or service more affordable or accessible to consumers.

bb) Innovative Business Model

Another characteristic of disruptive companies is that their products or services are made and marketed within a disruptive business model.

There exists no universal definition for the term ‘business model’. According to Teece, it “articulates the logic and provides data and other evidence that demonstrates how a business creates and delivers value to customers.”¹¹²⁹ Another definition is provided by Magretta: “Business models are, at heart, stories that explain how enterprises work. Like a good story, a robust business model contains precisely delineated characters, plausible motivations and a plot that turns on an insight about value. It answers certain questions: Who is the customer? How do we make money? What underlying economic logic explains how we can deliver value to customers at an appropriate cost?”¹¹³⁰

Having defined the term ‘business model’, it remains to establish when it ought to be viewed as innovative. According to Christensen, the most important indicator of whether a business model is innovative is whether the ideas included in the business model allow the company to target either low-end consumers or nonconsumers of an established company.¹¹³¹

Low-end customers are—as the name implies—found at the low end of the mainstream market of the incumbent. They are so-called ‘overshot customers’, i.e., customers who are not willing to pay for further improvements in the per-

¹¹²⁸ For more information on 3D printing, see D'Aveni, 106–113. See also Gavin Matt, ‘3 Examples of Disruptive Technology That Are Changing the Market’ (*Harvard Business School Online*, 29 October 2018) <<https://online.hbs.edu/blog/post/disruptive-technology-examples>> accessed 27 December 2023.

¹¹²⁹ Teece (2010), 173.

¹¹³⁰ Magretta Joan, ‘Why Business Models Matter’ (*Harvard Business Review*, May 2002) <<https://hbr.org/2002/05/why-business-models-matter>> accessed 27 December 2023.

¹¹³¹ Christensen, Anthony and Roth, 5.

formance of a product or service.¹¹³² Accordingly, overshot customers refer to customers who are generally satisfied with current solutions but find them to include features they do not need and, consequently, do not value.¹¹³³ They must be distinguished from undershot customers who are usually dissatisfied with an existing solution and would also be happy to pay a premium for a better product or service.¹¹³⁴ This distinction is important as innovation serving undershot customers generally offers improvement and thus constitutes sustaining innovation, whereas innovators targeting overshot customers often bring about disruption.¹¹³⁵ This is because they aim to create products or services for a specific customer segment that wishes solutions that are ‘good enough’. Companies targeting such customers, therefore, seek to create new business models to serve the least-demanding customers.¹¹³⁶ The introduction of 3D printers in real estate shall make the point clearer: although architecturally less beautiful and fancy, 3D-printed houses are much cheaper than manually constructed buildings, addressing customers that are not seeking exclusivity but homes that are ‘good enough’ to live in.¹¹³⁷

Another group of customers to look for in the start-up’s business model is whether they target nonconsumers. Nonconsumers are customers who want a job to get done but face barriers to using existing solutions because they lack the skills or financial means to use or buy them.¹¹³⁸ For instance, a person who wants to occasionally feel important but may not afford designer clothing and expensive jewellery is a nonconsumer regarding these goods. Rent the Runaway recognised this potential and created an e-commerce solution that allows people with low budgets to rent very expensive clothes for special occasions.¹¹³⁹ It, therefore, built a solution that allows former noncustomers to indulge themselves in expensive clothes whilst enabling designers to showcase their collections to a wider audience.¹¹⁴⁰

¹¹³² *ibid*, 5 and 11–13.

¹¹³³ Anthony et al., 66.

¹¹³⁴ Christensen, Anthony and Roth, 5 and 9–11.

¹¹³⁵ *ibid*, xv–xvii and 4–5.

¹¹³⁶ *ibid*, 5.

¹¹³⁷ Cote Chatherine, ‘What is Low-End Disruption? 2 Examples’ (*Harvard Business School Online*, 13 January 2022) <<https://online.hbs.edu/blog/post/low-end-disruption>> accessed 27 December 2023.

¹¹³⁸ Anthony et al., 66.; see also Christensen, Anthony and Roth, 5 and 6–8.

¹¹³⁹ See Rent the Runaway, <<https://www.renttherunway.com/>> accessed 27 December 2023.

¹¹⁴⁰ Modestus Joel ‘Opportunities for Innovation: The Three Types of Customers’ (*LinkedIn*, 30 April 2015) <<https://www.linkedin.com/pulse/opportunities-innovation-three-types-customers-joel-modestus>> accessed 27 December 2023.

Transferred to the assessment of killer acquisitions, these findings suggest that assessing the target's business model in order to ascertain who the innovation targets in relation to the incumbent is crucial to get valuable insights into the disruptive potential of the start-up in question. More precisely, the European Commission may want to assess whether, in relation to the incumbent, the start-up either targets overshot customers or noncustomers with its business model.

cc) *Coherent Value Network*

Last but not least, according to Christensen, a coherent value network must be established in order to find disruption. Christensen defines the term 'value network' as "the context within which a firm identifies and responds to customers' needs, solves problems, procures input, reacts to competitors, and strives for profit."¹¹⁴¹ Put differently, it describes a kind of ecosystem of firms that all together aim to support a specific value proposition. Thereby, the way value is measured depends on the network in question and thus needs to be defined by economists on a case-by-case basis.¹¹⁴²

According to Christensen, a value network is coherent if upstream and downstream partners, i.e., suppliers, distributors and customers, are better off if the disruptive innovation in question thrives.¹¹⁴³ The idea behind this is that there is no technology that is particularly imbued with disruptive features. Instead, disruption occurs on the level of value networks when a technological network supplants another. To take up the example of 3D-printed homes, this would mean that if companies currently operating at the low end of the market managed to improve the quality of their on-site 3D-printed homes in a way that would allow them to move upmarket, they could benefit both upstream as well as downstream partners and eventually disrupt the market.¹¹⁴⁴

In the context of killer acquisitions, the European Commission would first have to identify the current value network—an exercise that would need to be specified by economists. Moreover, the Commission would need to ascertain whether, if the innovation of the target becomes successful, it will benefit both

¹¹⁴¹ Christensen, 32.

¹¹⁴² *ibid.*, 34.

¹¹⁴³ Christensen Institute, 'Disruptive Innovation' (Christensen Institute) <<https://www.christenseninstitute.org/disruptive-innovations/>> accessed 27 December 2023.

¹¹⁴⁴ Cote Chatherine, 'What is Low-End Disruption? 2 Examples' (Harvard Business School Online, 13 January 2022) <<https://online.hbs.edu/blog/post/low-end-disruption>> accessed 27 December 2023.

the upstream and downstream partners. To this end, it would have to assess whether the value network would be better off with the start-up's innovation. Market inquiries and interviews, for instance, may be two tools to assess the impact of the technology on the value network.

dd) Implications of the Findings

If the Commission finds a realistic prospect of the start-up holding disruptive potential, it should presume the transaction to be anti-competitive. This is because, due to its closeness, the incumbent may be interested in hampering the innovation process and influencing the technology in a way that favours itself the most. In such cases, the burden of proof would shift to the merging companies.¹¹⁴⁵

In contrast, if the Commission does not find the start-up to hold any disruptive potential, it needs to assess whether the target's sustaining innovation may strengthen the incumbent's position in the technological network.

b) Potential to Strengthen the Incumbent's Position in the Technological Network

If the European Commission finds no evidence pointing towards the target holding disruptive potential, it should assess whether and how the transaction could strengthen the incumbent's position in the technological network. Valuable indicators in this regard are whether: (i) the target could become a meaningful player in the network, (ii) there is a significant overlap of user base between the merging parties or (iii) the transaction serves the purpose of getting hold of valuable data. These conditions are not cumulative; instead, it is the overall assessment that should help the Commission ascertain whether the transaction could harm competition and innovation.¹¹⁴⁶

aa) Potential of Becoming a Meaningful Player

First, the Commission could ascertain whether the target has the potential to become a meaningful player in the incumbent's technological network, i.e., whether it exhibits a large potential to grow independently in the near future.

¹¹⁴⁵ For more information on the burden-shifting framework proposed within this thesis, see [Part IV: Chapter 1: C. 1.2.b\).](#)

¹¹⁴⁶ See also [Part III: Chapter 1: C. 5](#), where it was found that there exists no 'checklist' for the assessment of harm, as every case is different and, consequently, needs to be assessed individually.

This is important because the higher the potential of the target to become a meaningful actor, the more likely it is that the incumbent wants to acquire it in order to tame a potential future threat, thereby lowering valuable streams of uncertainty within the technological network. To ascertain the potential of the start-up, the Commission may want to look at network effects and data.¹¹⁴⁷

Two useful indicators to analyse potential network effects may be the assessment of the target's potential for user growth and, where applicable, the time users spend on its platform. These are particularly important aspects to consider in digital markets as success is not necessarily measured by the superiority of productivity—as is the case in more traditional markets—but by the capacity to attract sufficient users through network effects.

To assess the target's potential for growth, the Commission could, for instance, look at the number of app downloads (where there are any), the number of active and passive users and the exponential traction the innovation gained over the past months and years.¹¹⁴⁸

The importance of the assessment of user growth can be best illustrated by Instagram: when the photo-sharing app launched its product in October 2010, it attracted 25,000 users in only one day.¹¹⁴⁹ After one week, it had been downloaded 100,000.¹¹⁵⁰ By the time Instagram was acquired, it had built a significant user base of approximately 27 million people,¹¹⁵¹ exhibiting a high very high growth potential. Similar examples are offered by Facebook's start-up acquisitions of the social media and photo-sharing apps Divvyshot, Lightbox

¹¹⁴⁷ [Part III: Chapter 1: C. 5.1.a\)ee](#).

¹¹⁴⁸ See also the Draft of the Market Definition Notice, para. 107, where the Commission finds that following alternative metrics could be useful in digital markets: the number of (active) users, the number of visits, time spent or audience numbers, the number of downloads and updates, the number of interactions, volume or value of transactions concluded over a platform.

¹¹⁴⁹ Instagram, 'Instagram Launches' (Instagram, 6 October 2010) <<https://about.instagram.com/blog/announcements/instagram-launches>> accessed 27 December 2023.

¹¹⁵⁰ Siegler MG, 'Instagram Captures 100,000 Mobile Photo Addicts In Less Than A Week' (TechCrunch, 13 October 2010) <<https://techcrunch.com/2010/10/13/instagram-users/>> accessed 27 December 2023.

¹¹⁵¹ Cutler Kim-Mai, 'Instagram Reaches 27 Million Registered Users and Says Its Android App Is Nearly Here' (TechCrunch, 11 March 2012) <<https://techcrunch.com/2012/03/11/instagram-reaches-27-million-registered-users-shows-off-upcoming-android-app/>> accessed 27 December 2023.

Moves, Hello and tbh.¹¹⁵² They all exhibited increasing numbers of downloads, indicating great growth potential to become meaningful players in Facebook's technological network. Yet, or maybe because of their potential to threaten Facebook's existing services, they were all shut down soon after their acquisition through the big technology giant.¹¹⁵³

An opposite example is provided by the transaction between Amazon and The Book Depository. Given that the online bookseller Book Depository was a very small market player, holding less than 5% market shares¹¹⁵⁴ and, according to internal documents and third parties' comments, it enjoyed only low growth over the years before the merger,¹¹⁵⁵ the Office of Fair Trading did not find it realistic for Book Depository to become a threat to Amazon and that the acquisition would substantially lessen competition.¹¹⁵⁶ Similarly, in PayPal/iZettle,¹¹⁵⁷ the Competition and Markets Authority established that iZettle "would only have been able to develop its offering slowly and would have remained a marginal player for the foreseeable future."¹¹⁵⁸ Accordingly, it did not find iZettle to hold the potential to become a meaningful player on its own.

Besides user growth that may be measured through app downloads or people joining a platform, time spent on the platform may also be crucial to consider the potential of the nascent firm concerned, especially if the start-up's business model shows that its monetising strategy hinges on advertising. For in-

¹¹⁵² Schonfeld Erick, 'Facebook Buys Up Divvyshot To Make Facebook Photos Even Better' (*TechCrunch*, 2 April 2010) <<https://techcrunch.com/2010/04/02/facebook-buys-up-divvyshot-to-make-facebook-photos-even-better/>>; Constine Josh, 'Facebook Hires Team From Android Photosharing App Dev Lightbox To Quiet Mobile Fears' (*TechCrunch*, 15 May 2012) <<https://techcrunch.com/2012/05/15/facebook-lightbox/>>; Kastrenakes Jacob, 'Facebook is shutting down a teen app it bought eight months ago' (*The Verge*, 3 July 2018) <<https://www.theverge.com/2018/7/2/17528896/facebook-tbh-moves-hello-shut-down-low-usage>> all accessed 27 December 2023.

¹¹⁵³ For more information, see Lunden Ingrid, 'Facebook is shutting down Hello, Moves and the anonymous teen app tbh due to 'low usage' (*TechCrunch*, 3 July 2018) <<https://techcrunch.com/2018/07/02/facebook-is-shutting-down-hello-moves-and-the-anonymous-teen-app-tbh-due-to-low-usage/>>; Rob Price, 'Facebook is shutting down an anonymous app for teens it bought less than a year ago' (*Business Insider*, 3 July 2018) <<https://www.businessinsider.com/facebook-shutting-down-tbh-moves-hello-apps-low-usage-2018-7?r=US&IR=T>> both accessed 27 December 2023.

¹¹⁵⁴ OFT, Case ME/5085/11 – Amazon/The Book Depository, para. 46.

¹¹⁵⁵ *ibid*, para. 105.

¹¹⁵⁶ *ibid*, para. 107.

¹¹⁵⁷ CMA, Case ME/6766/18 – PayPal/iZettle.

¹¹⁵⁸ CMA, 'CMA clears PayPal / iZettle deal' (GOV.UK, 12 June 2019) <<https://www.gov.uk/government/news/cma-clears-paypal-izettle-deal>> accessed 27 December 2023.

stance, the importance of time spent on a platform becomes apparent when looking at Instagram and Twitch: Instagram has 2.35 billion monthly active users,¹¹⁵⁹ whereas the live-streaming video portal Twitch only exhibits 140 million monthly active users.¹¹⁶⁰ However, whilst Instagram has significantly more users, people spend way more time on Twitch than on Instagram. More precisely, whilst users spend, on average, 95 minutes per day on Twitch,¹¹⁶¹ users generally only spend 29 minutes per day on Instagram.¹¹⁶² Accordingly, advertising on Twitch may be just as attractive for advertisers even if it may have fewer users, making the assessment of time spent on the platform an important metric in such cases.

Overall, by relying on the findings resulting from the analysis of user growth and time spent on the platform in question, the European Commission can make fact-based assumptions on future network effects. The higher the potential for user growth and/or time spent on the site, the more likely it is that the target will benefit from positive network effects and, consequently, constitutes a valuable source of uncertainty in the incumbent's technological network. In this case, it is all the more important to let the target grow independently as it may create valuable streams of uncertainty in the incumbent's technological network, which in turn can benefit competition and innovation.

Conversely, if the Commission finds that the nascent firm exhibits only little potential for user growth or users generally spend only little time on the platform, it may conclude that the company in question only creates limited uncertainty, making the transaction less likely to harm competition and innovation.¹¹⁶³ Of course, in this case, also other factors would need to be considered, such as the platform's user base or data.

¹¹⁵⁹ Wise Jason, 'How Many People Use Instagram in 2024? (Monthly Active Users)' (*Earth Web*, 3 July 2023) <<https://earthweb.com/how-many-people-use-instagram/>> accessed 27 December 2023.

¹¹⁶⁰ Wise Jason, 'Twitch Statistics 2024: How Many People Use Twitch?' (*Earth Web*, 13 April 2023) <<https://earthweb.com/twitch-statistics/>> accessed 27 December 2023.

¹¹⁶¹ *ibid.*

¹¹⁶² Georgiev Deyan, 'How Much Time Do People Spend on Social Media in 2023?' (*techjury*, 28 February 2023) <<https://techjury.net/blog/time-spent-on-social-media/#gre>> accessed 27 December 2023.

¹¹⁶³ See also [Part IV: Chapter 1: C. 2.3.c](#), where the importance of the presence of uncertainty was discussed.

bb) User Base

As just mentioned, another important parameter to consider when assessing the merging parties' positions in the technological network is whether the merging parties' user bases overlap or are likely to do so in the future. To this end, it may be important not only to consider existing users—as the start-up may not yet exhibit a considerable user base—but also to look at the users targeted by the merging parties in the long run. This is because, as highlighted by Prat and Valletti, the larger the consumer overlap between the merging parties post-transaction, the more detrimental the acquisition would be as it increases the merged company's ability to restrict their output, i.e., engage in foreclosure strategies,¹¹⁶⁴ which in their model was advertisers' access to consumers.¹¹⁶⁵ This was also confirmed by Gautier and Lamesch, who found that “a merger between two networks offering different products to the same user groups can be used to substantially restrict competition on the market, even if the products offered to capture consumer attention are different.”¹¹⁶⁶ The restriction in competition thereby emanates from the fact that such transactions allow incumbents to additionally benefit from valuable network effects, which, as explained in Part I, may lead to lock-in effects and further raise market entry barriers.¹¹⁶⁷ Eventually, it may also enable the acquirer to foreclose actual or potential competitors.¹¹⁶⁸

An illustrative example in this regard is provided by Meta's acquisition of Giphy. Even though the gif creator Giphy¹¹⁶⁹ uses a very different technology than the social media giant Meta, the companies exhibit a large overlapping user base since many consumers active on Meta's social networks like Facebook, Instagram or WhatsApp also use Giphy's services of animated gifs.¹¹⁷⁰

¹¹⁶⁴ For more information on foreclosure, see [Part III: Chapter 1: C. 5.2.b](#).

¹¹⁶⁵ Prat and Valletti, 14–16.

¹¹⁶⁶ Gautier and Lamesch, 3. Note that harm created by user overlaps is also the underlying idea of the platform envelopment theory, which was discussed in more detail in Part III, see [Part III: Chapter 1: C. 5.2.c](#).

¹¹⁶⁷ Zhou Siyou, ‘Merger Control in Digital Era’ (FIDE Congress The Hague, 12 May 2021), 24 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3976594> accessed 27 December 2023; see also [Part I: Chapter 2: A. 1](#).

¹¹⁶⁸ [Part III: Chapter 1: C. 5.2.b](#).

¹¹⁶⁹ See Giphy, <<https://giphy.com/>> accessed 27 December 2023.

¹¹⁷⁰ Note that the CMA has recently decided that Meta needs to dispose of Giphy, finding that the transaction could harm social media users and UK advertisers. For more information, see CMA, ‘CMA directs Facebook to sell Giphy’ (CMA, 30 November 2021) <<https://www.gov.uk/government/news/cma-directs-facebook-to-sell-giphy>> accessed 27 December 2023.

cc) *Data*

Data can also play a crucial role when looking at the merging parties' positions in the technological network. Put differently, the Commission needs to establish whether the transaction involves valuable data that could strengthen the incumbent's position whilst allowing it to make more sense of the complexity prevailing in the technological network; for instance, by collecting crucial data about consumers and (potential future) competitors.

As was already underscored in Part I, data play a crucial role in digital markets and are, among other things, a decisive criterion for the market position of a company.¹¹⁷¹ They can convey considerable advantages to companies and may allow the incumbent to further strengthen its market position. Hence, even where the acquisition is not driven by the motive of removing a meaningful player, the Commission needs to ascertain whether the merger has the purpose of acquiring important data of the start-up, which could help the incumbent further solidify its position.

This is, for instance, also reflected in the *Visa/Plaid* case in which the Department of Justice ascertained that the target has access to crucial data from over 11,000 US banks and connects 200 million accounts with its innovation.¹¹⁷² Accordingly, the Department of Justice found that if Visa had been allowed to acquire the up-and-coming start-up and the data along with it, it might have enabled the incumbent to further strengthen its market position. Among other things, this was precisely why the Department of Justice blocked the transaction.¹¹⁷³

dd) *Implications of the Findings*

If the European Commission finds a transaction to involve a potentially meaningful future player of the incumbent's technological network and/or identifies that the transaction involves a significant overlap of the merging companies' user bases and/or data, it can assume the transaction to harm competition and innovation. This is because, in such cases, it is likely that the incumbent buys the nascent firm because of the threat it may pose to its position in the technological network so that costly uncertainty can be reduced.

¹¹⁷¹ [Part III: Chapter 1: C. 5.1.a\)dd](#)). For more information on the role of data, see also [Part I: Chapter 2: A. 5](#).

¹¹⁷² *U.S. v Visa Inc. and Plaid Inc.*, Case No. 4:20-cv-07810 (N.D.Cal. 2020), 3.

¹¹⁷³ For the whole reasoning, see *U.S. v Visa Inc. and Plaid Inc.*, Case No. 4:20-cv-07810 (N.D.Cal. 2020).

Accordingly, in these cases, the burden of proof shifts towards the merging companies. Of course, as highlighted by the General Court in *Sun Chemical Group and Others v Commission*,¹¹⁷⁴ the facts of each case need to be considered individually.

On the other hand, should the Commission not find any concerns about the above-mentioned metrics, it needs to assess whether the transaction may allow the incumbent to leverage its position in the technology market to the start-up's technology, thereby strengthening its position within the technological network.

c) *Anti-Competitive Leveraging / Exclusionary Practices*

If the start-up is found to hold neither disruptive potential nor to strengthen the incumbent's market position, the European Commission needs to assess whether the transaction allows the incumbent to engage in any anti-competitive leveraging practice, such as tying or bundling strategies,¹¹⁷⁵ or may increase its ability to engage in exclusionary practices.¹¹⁷⁶ Exclusionary practices within this thesis are thereby not to be understood as practices which could violate Art. 102 TFEU. Rather, exclusionary practices need to be assessed within the foreclosure analysis of the merger control framework, i.e., the Commission has to assess the ability and incentives of the merging companies to engage in such practices post-transaction and consider the overall impact of the transaction on choice.¹¹⁷⁷ This approach is also in line with the findings of Ullrich and Heinemann, who, regarding the relationship between merger control and Art. 102 TFEU, establish that the merger control analysis should not be intertwined with an assessment of Art. 102 TFEU. They argue that including an analysis of Art. 102 TFEU in merger control requires predictions that are highly complex and which may overburden the competition assessment.¹¹⁷⁸ Moreover, they specify that it is the merger control regime's very purpose to maintain pro-competitive structures, thus avoiding situations in which abuses could occur in the first place.¹¹⁷⁹ They, therefore, go a step further than the

¹¹⁷⁴ Case T-282/06 *Sun Chemical Group and Others v Commission*, para. 57.

¹¹⁷⁵ Körber in Immenga/Mestmäcker, Art. 2 EUMR para. 599.

¹¹⁷⁶ Examples of exclusionary practices were mentioned in [Part I: Chapter 2: B. 2.3.](#)

¹¹⁷⁷ Compare Non-Horizontal Merger Guidelines, paras. 95–118; See also Whish and Bailey, 927, who refer to “and other exclusionary practices”.

¹¹⁷⁸ Ullrich and Heinemann, para. 78. However, they find that commitments should be considered. This is because if companies commit to a certain behaviour in the future, there is sufficient certainty for a competitive prediction.

¹¹⁷⁹ *ibid*; see also Körber in Immenga/Mestmäcker, Art. 2 EUMR para. 600.

case law, according to which the deterrent effects of Art. 102 TFEU must be taken into account in the context of merger control. In *Commission v Tetra Laval*¹¹⁸⁰, the European Court of Justice found that if a certain behaviour is incompatible with Art. 102 TFEU, this reduces the likelihood that the merging parties will eventually engage in such conduct post-transaction.¹¹⁸¹ Accordingly, it argues that a possible breach of Art. 102 TFEU post-transaction cannot be used against the merger clearance. In the context of digital markets, such reasoning is, however, little convincing since “the rent of anticompetitive behavior may be higher than the sanctions”.¹¹⁸² Put differently, the legal disincentives to breach the law may not be sufficiently strong to tilt the cost-benefit analysis.¹¹⁸³ This applies especially in light of the long competition law procedure,¹¹⁸⁴ which may allow incumbents to solidify their market position until an infringement is established. Hence, this thesis finds the reasoning brought forward by Ullrich and Heinemann more convincing. It, therefore, argues that including aspects of exclusionary practices within the framework of the current merger control makes more sense than engaging in a full-fledged analysis

¹¹⁸⁰ Case C-12/03 P *Commission v Tetra Laval*.

¹¹⁸¹ *ibid*, para. 78. Note that in this case, the ECJ approved the approach taken by the Court of First Instance by finding that “the Court of First Instance was right to hold that the likelihood of its adoption must be examined comprehensively, that is to say, [...] taking account both of the incentives to adopt such conduct and the factors liable to reduce, or even eliminate, those incentives, including the possibility that the conduct is unlawful.” However, it disagreed with the standard of proof required by the lower court, finding that “it would run counter to the Regulation’s purpose of prevention to require the Commission, [...] to examine, for each proposed merger, the extent to which the incentives to adopt anti-competitive conduct would be reduced, or even eliminated, as a result of the unlawfulness of the conduct in question, the likelihood of its detection, the action taken by the competent authorities, both at Community and national level, and the financial penalties which could ensue.” Case C-12/03 P *Commission v Tetra Laval*, paras. 74–76. A comprehensive analysis of the inclusion of an illegality assessment in merger control is offered by Svetlicinii, 139–153.

¹¹⁸² Heinemann (2021), 2.

¹¹⁸³ An illustrative case in this regard is *Facebook/WhatsApp*, where the European Commission “has found that, contrary to Facebook’s statements in the 2014 merger review process, the technical possibility of automatically matching Facebook and WhatsApp users’ identities already existed in 2014, and that Facebook staff were aware of such a possibility.” EC, ‘Mergers: Commission fines Facebook €110 million for providing misleading information about WhatsApp takeover’ (EC Press Release, 18 May 2017) <https://ec.europa.eu/commission/presscorner/detail/en/IP_17_1369> accessed 27 December 2023. Facebook had to expect that its strategy would be exposed one day; presumably, it considered the benefits of its anti-competitive behaviour to outweigh the sanction arising from it.

¹¹⁸⁴ Heinemann (2021), 2.

of Art. 102 TFEU, which overcomplicates the competition assessment and, according to the current case law, may eventually not be allowed to be used as a ground to block the transaction.

d) Assessing the Counterfactuals

Finally, if the transaction raises no such concerns, the Commission needs to assess and compare the following three counterfactuals in order to establish the impact of the acquisition on innovation:

- The incumbent enters the technological space itself.
- The incumbent does not enter the technological space.
- The incumbent buys the start-up.

With regard to the first counterfactual, it should be specified that the Commission would need to first assess whether it finds evidence that, in the absence of the transaction, the incumbent would enter the market organically. If the Commission finds evidence that the incumbent is indeed likely to enter the technological space in the absence of the transaction, it needs to consider how this move would affect the dynamics in the technological space, i.e., whether an organic entry would benefit or harm innovation activity in the target's technology market in comparison to where the incumbent would be allowed to buy the start-up. To this end, the Commission may, for instance, consider the inverted-U theory developed by Aghion et al., which predicts that if competition is at a low level at the moment of the transaction, increased competition generally fosters innovation activity.¹¹⁸⁵ In contrast, starting from a high level of competition, innovation activity is generally sinking with increased competition. Accordingly, economists would need to assess on a case-by-case basis where the optimal lies for innovation in order to ascertain whether the clearance of transactions would benefit or harm innovation and, where applicable, how the incumbent's organic entry would play into the innovation dynamics within the incumbent's technological network.

If no evidence of an organic entry can be found, the Commission needs to engage in the same exercise, however, this time by asking itself whether the incumbent's entry through the acquisition would be more beneficial for innovation in comparison with where it would not enter the market. How exactly

¹¹⁸⁵ For more information on the inverted-U theory, see Aghion et al., 701–728. See also [Part II: Chapter 2: D. 1.1.](#)

the Commission would have to ascertain such dynamics shall be further elaborated on by economists. Depending on the outcome of this assessment, the Commission would either need to clear the transaction or shift the burden of proof to the merging parties.

4.3. Wide Killer Acquisitions

If the European Commission denies the presence of proximity, the concerns are those of wide killer acquisitions. In these cases, the main question is whether it would be more beneficial if the incumbent entered the market organically. To this end, the Commission needs to assess whether the competitive dynamics within the technological space of the start-up have already tipped in favour of a large company. It should be noted that how exactly the Commission should assess tipping will not be further elaborated upon within this thesis but be specified in the economic literature. The paper written by Petit and Moreno Belloso could, however, provide some guidance on this topic.¹¹⁸⁶

a) *Untipped Technological Space*

If the European Commission finds the start-up's technological space still to be untipped, it needs to establish (i) whether the target holds disruptive potential and (ii), if not, how would the acquisition of the sustaining technology affect innovation. If none of these scenarios applies, it must (iii) ascertain the different counterfactuals and their effects on innovation.

aa) *Disruptive Potential*

Similar to the assessment conducted under the framework created for narrow killer acquisitions, the European Commission first needs to assess whether the start-up holds disruptive potential, the criteria for which have already been set out earlier in this section.¹¹⁸⁷ It should be highlighted that, in the context of wide killer acquisitions, the assessment of the start-up's disruptive potential is important since, although not operating in close proximity, if it is affirmed, the transaction allows the incumbent to become a potential key player in the emerging technological space at an early stage, thereby potentially discourag-

¹¹⁸⁶ Petit Nicolas and Moreno Belloso Nataila, 'A Simple Way to Measure Tipping in Digital Markets' (Promarket, 6 April 2021) <<https://promarket.org/2021/04/06/measure-test-tipping-point-digital-markets/>> accessed 27 December 2023.

¹¹⁸⁷ [Part IV: Chapter I: C. 4.2.a\).](#)

ing other players with fewer resources to enter the technological space horizontally. Moreover, the transaction could allow the incumbent to further expand its existing market power and potentially create an ecosystem around it. To some extent, it may allow it to shape the emerging market in a way that best favours it whilst reducing potential competition it may have had to face had it entered the market organically.

Accordingly, if the European Commission finds the target to hold disruptive potential, the burden of proof should shift to the merging companies. In contrast, if the presence of disruptive potential is denied, the Commission needs to assess to what extent the acquisition of the sustaining innovation could harm the innovative process.

bb) Anti-Competitive Leveraging / Exclusionary Practices

If the start-up is not found to hold disruptive potential, the European Commission ought to establish whether the transaction concerned allows the incumbent to engage in anti-competitive leveraging¹¹⁸⁸ or exclusionary practices¹¹⁸⁹, which may allow it to further expand its technological network to this technological space.

cc) Assessing the Counterfactuals

Finally, if the transaction raises no concerns regarding future leveraging or exclusionary practices, the Commission needs to compare the effects of the counterfactuals on the innovation process, the assessment of which has been discussed earlier in this section.¹¹⁹⁰

b) Tipped Technological Space

If the Commission does not find the technological space to be already tipped in another incumbent's favour, acting as a key company in the space in question, the approval of the transaction may benefit the structure of the technological space as it would allow another company with similar resources and capabilities to enter the market, thereby increasing uncertainty, thus benefiting competition and innovation. Moreover, unlike in narrow killer acquisition

¹¹⁸⁸ The conditions for finding such anti-competitive practices were already discussed in [Part III: Chapter 1: C. 5.2.b\)bb\)](#) and will not be repeated here.

¹¹⁸⁹ With regard to the exclusionary practices, consider the remarks made above in [Part IV: Chapter 1: C. 4.2.c\)](#).

¹¹⁹⁰ [Part IV: Chapter 1: C. 4.2.d\)](#).

cases, the acquirer would not be incentivised to kill a potentially disruptive company as, given the ‘distance’ to its core technology, there is most likely no such risk. In such cases, the incumbent has, therefore, a strong interest in fostering the innovation efforts of the target in order to stand a chance to succeed against the established firm. Accordingly, the approval of such a start-up acquisition would most likely be beneficial for competition and innovation and not constitute a killer acquisition.

D. Remedies

If the Commission finds a transaction to be anti-competitive, the merging parties may offer remedies to eliminate these concerns.¹¹⁹¹ However, as argued in Part III, the current remedies framework poses various challenges to killer acquisitions. This is mainly due to the fact that, at the time of the transaction, it is often difficult to ascertain how appropriate the remedy given will effectively be in the long run.¹¹⁹²

1. Allowing Ex-Post Modifications

A possible solution to alleviate this challenge could be to allow the Commission to intervene post-transaction if it finds that the given commitments do not have the desired effects. In this case, the Commission would be more flexible to require an ex-post modification of the given remedies, enabling it to change the remedies depending on the developments post-transaction.¹¹⁹³

At the same time, the effective enforcement of such an approach would require the Commission to engage in medium and long-term monitoring. This may eventually run the risk that it leads to permanent monitoring such as is typically found in regulated industries like the telecommunication sector. In addition, it could also be argued that such an approach would substantially increase the Commission’s workload as it would require the Commission to periodically review the transaction and assess whether the remedies given achieve the desired effects. However, in this regard, it could be counterargued that it is likely that the number of cases in which such measures would be neces-

¹¹⁹¹ For more information on the role of remedies, see [Part III: Chapter 1: D.](#)

¹¹⁹² [Part III: Chapter 1: D. 4.](#)

¹¹⁹³ See with a similar proposal Parker, Petropoulos and Van Alstyne, 1332–1333. Due to the nature of killer acquisitions, it would, however, make sense to apply this extension to incumbents more generally and not just to gatekeepers, as suggested by these authors.

sary is limited anyway. This is because killer acquisitions would first have to go through various filters: (i) the merger would need to be either caught by the turnover thresholds or be referred to the Commission, (ii) the Commission would thereupon need to find anti-competitive effects that outweigh positive effects and (iii) the merging parties would need to submit remedies that the Commission views as sufficient to eliminate the competition concerns raised. Hence, due to the limited cases that may eventually require an ex-post modification, the fear of a substantial increase in workload should not hold back the Commission from introducing such a change with regard to killer acquisitions occurring in digital markets.

2. Increased Use of AI to Monitor the Commitments

To reduce the fear of increased workload, the Commission could also consider applying AI to monitor commitments given by the merging parties.

At the panel about computational antitrust during a conference hosted by Greece's Competition Commission and the BRICS Competition Law and Policy Centre, Régibeau—the Chief Competition Economist of DG Competition—revealed that competition authorities are indeed increasingly hiring chief technology officers to work alongside economic and legal teams, thereby particularly concentrating on developing tools that could more easily detect anti-competitive behaviour. Although the focus of research currently lies on the detection of cartels,¹¹⁹⁴ AI could potentially also be used to monitor commitments attached to the clearance of start-up acquisitions. In other words, the European Commission could apply AI to better monitor cleared transactions involving nascent companies, thereby indicating any diverging behaviour of the merging parties. How exactly such AI would need to be designed is, however, not the subject of this thesis as it would exceed its scope. In general, it can be said though that such increased use of AI in the enforcement of killer acquisitions could also be useful in connection with the suggestion made earlier that the Commission should be able to bind the merging parties to the evidence and intentions submitted at the time of the transaction, thereby requir-

¹¹⁹⁴ Régibeau Pierre, 'The Promise of Computational Competition Law and Economics: Issues, Prospects' (Hellenic Competition Commission and BRICS Competition Law and Policy Centre, 24 May 2021) <<https://www.epant.gr/en/enimerosi/publications/media/item/1401-the-promise-of-computational-competition-law-and-economics-issues-prospects.html>> accessed 27 December 2023.

ing the companies to inform it about any diverging behaviour beforehand,¹¹⁹⁵ as it would allow the Commission to monitor compliance with this duty more effectively.

E. Interim Summary

This chapter aimed to analyse possible solutions that could render the current EUMR more effective in tackling the ongoing challenges of killer acquisitions. To this end, this chapter first discussed whether there could have been possible alternatives to the introduction of the new Guidance on Art. 22 EUMR in combination with Art. 14 DMA. It concluded that, for the moment, the new practice constitutes the most effective way to tackle challenges posed by killer acquisitions. It further established that Advocate General Kokott's suggestion to complement the current system by allowing the ex-post review of mergers that have neither triggered the turnover thresholds nor have been reported via the referral system constitute a valuable additional instrument to ensure the effective enforcement of killer acquisitions. The recent confirmation of this Opinion by the European Court of Justice is therefore highly welcome.

In a second step, this chapter analysed how Art. 22 EUMR could be rendered more effective. First, it suggested the development of clearer criteria for the assessment of killer acquisitions that would enable the merging parties to exclude referrals with more legal certainty without having to consult the competition authorities beforehand. In this regard, it found that the proximity assessment combined with the legal test proposed within this thesis could provide a solid framework to increase legal certainty for merging parties. Secondly, it suggested raising the European Commission's resources in the future. This could also contribute to ensuring a swifter process and reducing the period between the complaint and the invitation letter in the future, which would be another welcome development.

The third section of this chapter addressed the challenges raised by killer acquisitions in connection with the substantial analysis. To this end, it was first discussed how the current high standards of proof could be amended so that it can more effectively deal with the uncertainties inherent to the assessment of killer acquisitions. It found that whilst neither the introduction of a balance of harm test nor the reversal of the burden of proof would be the most proportionate solution, a more balanced approach would be provided by a bur-

¹¹⁹⁵ [Part IV: Chapter I: C. 1.3.b\).](#)

den-shifting framework. According to this framework, the European Commission would have to show first that there is a realistic prospect of harm, which would then lead to a shift of the burden of proof to the merging parties. They would then have to show that anti-competitive effects are unlikely or that there is a realistic prospect that pro-competitive efficiencies dominate. These arguments would eventually have to be assessed again by the Commission. For finding a 'realistic prospect' of an impediment to competition, the Commission could use the same standard of proof used in deciding whether or not to initiate the main examination, as was suggested by the CMA.

Moving to the challenges posed by the assessment of a significant impediment to effective competition, this thesis suggests that the Commission should start its analysis with the application of the proximity assessment, according to which the Commission would have to assess the closeness of innovations functionalities and intended use within the technological network surrounding the incumbent's core technology. To this end, not only the status quo of the functionalities ought to be considered, but also the outer limits of the potential of the nascent company's innovation should be taken into account. By focusing on the interconnectedness of the target's innovation with the incumbent's technological network, this assessment creates a more comprehensive basis for the subsequent legal test than the traditional market definition.

The legal test contains a two-tier test, the application of which depends on whether proximity is affirmed (narrow killer acquisition) or denied (wide killer acquisition) in the proximity assessment. The assessment of narrow killer acquisitions consists of four main steps, asking whether: (i) the nascent company holds disruptive potential, (ii) the transaction strengthens the incumbent's position in the network, (iii) the acquisition allows the incumbent to engage in anti-competitive leveraging practices and (iv) how the counterfactuals affect innovation. Depending on how these questions are answered, the burden of proof shifts to the merging parties. Regarding wide killer acquisitions, the starting question is whether the technological space in which the start-up operates or will do so in the future is already tipped. If this is denied, the Commission needs to assess whether the target holds disruptive potential and, if not, whether the transaction could allow the incumbent to engage in anti-competitive leveraging strategies, which may allow it to expand its technological network. In both cases, the organic entry of the incumbent would be more beneficial from a competition and innovation perspective. If the Commission finds that none of these criteria applies, it eventually needs to assess how the counterfactuals would affect innovation. Conversely, if the technological space is already tipped in favour of another incumbent, the acquirer's or-

ganic could create a valuable source of uncertainty for the incumbent already active in the technological space, given that it has comparable resources to compete. In such cases, the inorganic entry of the incumbent into the target's technological space could therefore benefit both competition and innovation, and the transaction should be approved.

Finally, with regard to remedies, this chapter suggested that the European Commission should get the possibility to intervene post-transaction if it finds that the remedies attached to the approval of a transaction did not have the desired effects. This approach should be combined with a new provision that allows the Commission to bind the merging parties to the evidence and intentions submitted at the time of the transaction, thereby requiring the companies to inform it about any diverging behaviour beforehand. To ensure effective enforcement, the Commission could also think about expanding its monitoring time frame to medium and long-term monitoring for start-up acquisition cases. The increased application of AI may thereby help reduce the fear of a resulting increased workload.

Chapter 2: Possible Amendments to the DMA

Having established how the EUMR could be amended, it remains to assess how the DMA could be rendered more effective in the fight against killer acquisitions. To recap, in Part III, it was found that the DMA undoubtedly contributes to monitoring killer acquisitions but that its effectiveness is limited to tackling such cases on a substantial level.¹¹⁹⁶ Hence, this chapter seeks to discuss additional avenues to address the challenges posed by such transactions in the context of gatekeepers. To this end, it will (i) consider the advantages and disadvantages of implementing an outright M&A ban for gatekeepers and (ii) examine how the introduction of a bidding platform could contribute to alleviating existing problems.

A. Introducing an M&A Ban

As explained above, the DMA provides the possibility that, in cases of gatekeepers' non-compliance with the Regulation, the Commission can impose a ban on gatekeepers to acquire businesses providing core platform services or other services in the digital sectors.¹¹⁹⁷ This raises the question of why the Commission does not directly introduce a prophylactical prohibition for start-up acquisitions by gatekeepers.¹¹⁹⁸

1. Advantages

Introducing an M&A ban on gatekeepers in the EU would generally provide a highly practical solution with regard to killer acquisitions, allowing the Commission to (i) block the exploitation of dominant technology companies' control of essential infrastructure to identify potential threats and (ii) ban any po-

¹¹⁹⁶ [Part III: Chapter 2: D.](#)

¹¹⁹⁷ Art. 18(2) DMA.

¹¹⁹⁸ Note that such an approach has primarily been discussed by supporters of the Brandeis movement in the US. For more information on this movement in general, see, for instance, Khan (2017), 792–797; Khan and Vaheesan, 235–294; Stroller Matt, 'The Return of Monopoly' (New Republic, 12 July 2017) <<https://newrepublic.com/article/143595/return-monopoly-amazon-rise-business-tycoon-white-house-democrats-return-party-trust-busting-roots>> accessed 27 December 2023.

tential anti-competitive merger whilst also preventing start-ups from being coerced into selling.¹¹⁹⁹ In fact, it would force founders and funders to consider their second-best option, which, as explained in Part II, would be a welcome development.¹²⁰⁰ Moreover, it would allow the Commission to save valuable resources that it would need to spend on complex merger analyses otherwise.

2. Disadvantages

At the same time, it should also be highlighted that besides the fact that such a far-reaching M&A ban would probably meet much resistance from lawyers, economists and lobbyists, it has also been brought forward that such a measure is disproportionate and would imply a potential disproportionate encroachment on fundamental rights.¹²⁰¹ Another argument often raised in this regard is that start-up acquisitions are not always anti-competitive but can also have positive effects.¹²⁰² To take up the legal tests designed in the previous chapter, an M&A ban would, for instance, also prohibit transactions in tipped markets that take place outside the incumbent's technological network, even though such transactions are presumably beneficial for competition and innovation.¹²⁰³ Viewed like that, such an approach may indeed provide an insufficiently balanced approach. This argument can be further underpinned by the fact that by prohibiting nascent firms from being acquired, thereby reducing the prospect of being bought by a gatekeeper, an M&A ban could limit overall investments.¹²⁰⁴ Based on these findings, the following subchapter, therefore, seeks to elaborate on a less drastic yet effective alternative to an M&A ban.

¹¹⁹⁹ See also Cicilline David and Sensenbrenner F. James Jr., 'Open Markets' (*Open Markets*, 17 April 2020) <https://res.cloudinary.com/gcr-usa/image/upload/v1587491901/OMI_sytrjl.pdf> accessed 27 December 2023.

¹²⁰⁰ See [Part II: Chapter 3: B](#).

¹²⁰¹ See, for instance, concerns raised by Furman Report, para. 3.103; Rizzo, 4 et seq.; Podszun (2020), 85.

¹²⁰² For instance, Furman Report, 101; Levy, Mostyn and Buzata 62 et seq. For more information on the positive and negative effects of killer acquisitions, see also [Part II: Chapter 2: D. 3.1](#).

¹²⁰³ [Part IV: Chapter I: C. 4.3.b](#).

¹²⁰⁴ See [Part II: Chapter I: A. 2.3](#).

B. Introducing a Bidding Platform with a Bidding Cap

An alternative approach to an M&A ban for gatekeepers could be the introduction of a bidding platform with a bidding cap. In other words, the Commission could include a section in the DMA foreseeing that, before informing competition authorities about their intention to merge, gatekeepers have a special obligation to publicly communicate their intention to acquire any company, irrespective of its size, thereby allowing other companies to participate in the bid. In combination with a bidding cap, such an obligation would render the whole process of gatekeepers buying nascent firms more transparent whilst enabling smaller companies with fewer data and thus less information power to get a chance to participate in the bidding race.

1. Outlining the Underlying Problem of the Current ‘Bidding System’

It is well known that gatekeepers generally hold tremendous bargaining powers that are superior to any smaller company. For instance, even if Google concluded a billion-dollar deal, it would represent less than 0.1% of its \$1.4 trillion market capitalisation¹²⁰⁵—sums that smaller companies interested in expanding cannot pay.

Moreover, having much at stake due to their large market power, incumbents generally have the highest interest in purchasing start-ups that could threaten their market position. This is also illustrated in Salop’s example, which is summarised in the following figure.

¹²⁰⁵ De Vynck Gerrit and Cat Zakrzewski, ‘The giants quietly buy up dozens of companies a year. Regulatory are finally noticing’ (*The Washington Post*, 22 September 2021) <<https://www.washingtonpost.com/technology/2021/09/20/secret-tech-acquisitions-ftc/>> accessed 27 December 2023.

		Profit by Winning Bidder		Maximum Bid
		Dominant Platform Wins	Rival Wins	
Bidder	Dominant Platform	200	100	100 (i.e., 200-100)
	Rival Bidder	20	60	40
	Combined Profits	220	160	

Figure 9: Bidding Race between an Incumbent and Its Rivals¹²⁰⁶

From this figure, it can be deduced that whilst a smaller firm may increase its profits from 20 to 60 thanks to the acquisition and therefore is likely to bid a maximum of 40 as this represents the profit it can draw from the transaction, the dominant company may be willing to bid up to 100 in the same scenario. This is because its profits may be shortened by 100 if the other bidding company wins the race—a situation which would interfere with its supra-competitive profits. In general, it can therefore be derived from this example that if one of the companies participating in the bid holds substantial market power, which allows it to generate profits (in this example amounting to 220) that exceed the total industry profits (in this example equalling 160),¹²⁰⁷ it may be systematically incentivised to outbid smaller companies.¹²⁰⁸

Incumbents’ willingness to exploit their bidding advantage becomes particularly apparent when looking at start-up acquisitions. For instance, in 2014, eight out of the ten largest disclosed transactions concerned up-and-coming firms, including SAP America’s acquisition of Concur Technologies for \$8.3 billion, Google’s purchase of Nest Lab for \$3.2 billion, Amazon’s acquisition of Twitch Interactive Face for \$1.1 billion, Facebook’s purchase with Oculus VR for \$3.0 billion and WhatsApp for roughly \$22 billion.¹²⁰⁹ Although these massive sums are undoubtedly highly attractive for start-ups and their investors, they also come with the problem that they may systematically disincentivise companies whose potential is considered high by a gatekeeper to either make an

¹²⁰⁶ Salop, 15.

¹²⁰⁷ *ibid.*, 15.

¹²⁰⁸ *ibid.*, 14 et seq., paras. 43–45.

¹²⁰⁹ Lemley and McCreary, 19 fn. 69 with further remarks.

IPO or sell out to another firm offering a lower purchasing price.¹²¹⁰ Accordingly, it contributes to the vicious cycle of incentives that has been established in Part II and which allows incumbents to keep and continuously expand their market position.¹²¹¹

2. Designing a Bidding Platform

A measure that could counteract these tendencies by alleviating the disparity in bargaining power between incumbents and smaller firms is the introduction of a bidding platform. More specifically, the European Commission could impose on gatekeepers the obligation of publishing all intended acquisitions prior to the conclusion of a purchase agreement on the bidding platform, thereby allowing other companies interested in the bid to make an offer too. By doing so, this measure would complement the gatekeeper's existing obligation to signal the Commission any intended acquisition by forcing them to additionally make their intentions public so that other companies also get a chance to place a bid.

It should be specified that the conclusion of the transaction would be treated like any other. Accordingly, the merger would not be immune to the European Commission's scrutiny when the bidding period is closed. In case no other company than the gatekeeper would engage in the bid, the transaction would, therefore, still need to be signalled to the Commission through Art. 14 DMA.¹²¹² This also applies if the target was eventually sold to another gatekeeper than the one originally making its intentions public.¹²¹³ In cases where no gatekeeper wins the bid, the transaction could be referred by any Member State to the Commission through Art. 22 EUMR.¹²¹⁴

3. Introducing a Bidding Cap

To ensure that smaller companies effectively stand a chance in the bidding race, the Commission would additionally have to introduce a bidding cap for gatekeepers. In other words, due to gatekeepers' supra-competitive profits

¹²¹⁰ See also Schwenbacher, 1890, stating that "[t]he incumbent has an incentive to make an offer that is higher than what the company would get through a public offering."

¹²¹¹ [Part II: Chapter 1: B.](#)

¹²¹² For more information on Art. 14 DMA, see [Part III: Chapter 2: C.](#)

¹²¹³ Note that any gatekeeper is bound to the bidding cap, also gatekeepers that do not do the initial offer.

¹²¹⁴ For more information on Art. 22 EUMR, see [Part III: Chapter 1: B. 2.](#)

and the strong bargaining power explained above,¹²¹⁵ it would be indispensable for the effectivity of the bidding platform to make sure that gatekeepers cannot bid higher than a certain percentage of the stand-alone value of the nascent company. Only like this would smaller companies with lower bargaining power be able to stand a chance to effectively enter the bidding race. Thereby, it should be noted that whilst the price paid is not the only reason why a start-up may want to sell to a renowned company,¹²¹⁶ it could nevertheless incentivise the target to consider its second-best options.¹²¹⁷ After all, in a capitalistic world, money is generally a key driver. Moreover, in light of recent developments, a good reason for small companies to avoid selling to a gatekeeper may also be to circumvent the heightened scrutiny such a transaction may receive from the European Commission, which may inject considerable time delays and maybe even jeopardise the clearance of the transaction.

4. Establishing Bidding Guidance

The effective introduction of a bidding platform combined with a bidding cap for gatekeepers would require the European Commission to establish clear guidance on the valuation methods of nascent firms. Otherwise, company valuation and, consequently, the amount of the bid for gatekeepers may widely differ. In general, there exists a broad range of valuing methods, going from probably the most popular Discounted Cash Flow Valuation, more commonly known as DCF, to other methodologies, including the Venture Capital method, Berkus method, scorecard valuation, asset-based valuation, risk factor summation, cost-to-duplicate, or a combination of different kinds of methods.¹²¹⁸ Given that each market may require other standards, it would make sense if the European Commission established categories of various industries within the digital economy and issued best practices for valuing methods depending on these categories. Such a differentiated approach is necessary as, for instance, acquisitions of companies operating as software as a service use very different valuing standards than firms operating in the Fintech sector. Accordingly, it may be necessary to distinguish different sector-specific categories.

¹²¹⁵ [Part IV: Chapter 2: B. 1.](#)

¹²¹⁶ See [Part II: Chapter 1: A. 2.](#)

¹²¹⁷ [Part II: Chapter 3: B.](#)

¹²¹⁸ Richards Robbie, 'How to Value a Startup Company With No Revenue' (*Masschallenges*, 1 May 2023) <<https://masschallenge.org/article/how-to-value-a-startup-company-with-no-revenue>> accessed 27 December 2023.

5. Purpose and Advantages of a Bidding Platform with a Bidding Cap

The introduction of a bidding platform combined with a bidding cap for gatekeepers would serve multiple purposes. For instance, it would facilitate the monitoring of gatekeepers' transactions and contribute to generally creating more transparency in digital markets, thereby allowing smaller companies to take part in the bidding race, which would maybe not have known about the start-up's potential before the conclusion of the deal. Accordingly, such an approach could help change current business practices. Moreover, by documenting ongoing developments, the platform could also serve as a source of information for the general public to get a fuller picture of ongoing developments in the digital markets.

The introduction of a bidding cap would also allow the Commission to reduce the prevailing asymmetrical bargaining and information power between gatekeepers and smaller firms, thereby encouraging the latter to engage in the bidding battle. In other words, introducing a bidding cap may motivate smaller companies to become more active acquirers and incentivise nascent firms to consider selling their businesses to companies other than gatekeepers. Furthermore, such an approach may also contribute to achieving less concentrated markets whilst still leaving gatekeepers a chance to take part in the bidding race, which is an advantage over the introduction of an M&A ban.

In addition, compared to an outright M&A ban, introducing a bidding cap for gatekeepers may prevent the occurrence of the undesirable scenario that a promising start-up does not find an alternative acquirer and would not be able to survive in the absence of the transaction. It may also come with the advantage that the bidding platform could contribute to more effectively establishing the counterfactual scenario by helping the European Commission to better ascertain whether other competitors would be willing to engage in the transaction in question and if so, what price they would be willing to pay.¹²¹⁹ For instance, in the *Facebook/Instagram* case, it was revealed post-transaction that Twitter had ambitions to acquire Instagram.¹²²⁰ If a bidding platform had already been in place at that time, the Commission might have been able to

¹²¹⁹ The challenges to establish the counterfactual were discussed above in [Part III: Chapter 1: C. 3.2](#) and [Part III: Chapter 1: C. 3.3](#).

¹²²⁰ Thompson Nicholas, 'Tim Wu Explains Why He Thinks Facebook Should Be Broken Up' (Wired, 5 July 2019) <<https://www.wired.com/story/tim-wu-explains-why-facebook-broken-up/>> accessed 27 December 2023.

elaborate more effectively on the counterfactual and consider the potential of the innovation. Moreover, knowing the interest of other companies in acquiring the start-up may also be practical in case the merging parties rely on the failing defence doctrine discussed in Part III, as it allows the Commission to establish alternative acquirers and assess the consequences of the clearance of the transaction on competition innovation in the different scenarios more easily.¹²²¹

6. Disadvantages

Even though bringing about many positive effects, the introduction of a platform also has downsides. For instance, such an approach is quite far-reaching and restricts gatekeepers' freedom to bid as much as they want. Moreover, it requires the European Commission to put in place a platform where gatekeepers can disclose any intended acquisitions and allows other interested parties to bid—an exercise which can be very costly and resource-intensive. Another disadvantage of this approach may be that ascertaining the stand-alone value is not a science where only one result is correct, even if applying the same standard. This creates a potential for disputes where other interested companies consider the standalone price used as a basis for the calculation of the bidding cap by the gatekeeper concerned incorrect. Finally, opponents of this idea may find that the bidding cap could reduce the incentives to invest in start-ups in the first place as the prospect of selling the company for the multiple of the price of the stand-alone value is smaller, which may reduce investors' willingness to fund innovation. It could, however, be counter-argued that the bidding cap only applies to gatekeepers and does not restrict other companies from bidding more. Moreover, it should also be underscored that exorbitant purchasing prices, as, for instance, witnessed in the *Facebook/Instagram* case, are anyway rather the exception than the rule and should not be an argument for investors to cease believing in the return innovation can bring.

7. Compatibility with the DMA's Objective

The introduction of a bidding cap in combination with the obligation of gatekeepers to publicly announce any intended acquisition would meet the DMA's goal to ensure “contestable and fair markets in the digital sector across the

¹²²¹ For more information on the failing firm defence, see [Part III: Chapter 1: C. 6.2.](#)

Union where gatekeepers are present”.¹²²² After all, such an approach would promote fairness by increasing equal business opportunities that are detached from incumbents’ superior bargaining power and information asymmetry. In this regard, the bidding platform would create a more levelled playing field for smaller firms that would want to participate in the bidding race yet, due to the significantly smaller capital and a smaller amount of data, would not be able to take part in the bid in the first place because they would either learn about it too late or because they would not have the financial means to bid as much as the incumbent. By creating more transparency regarding incumbents’ acquisition strategy, the introduction of a bidding platform would therefore mitigate asymmetries emanating from gatekeepers’ data and bargaining power. At the same time, such an approach would presumably stimulate growth opportunities for other start-ups or smaller firms. Moreover, it may contribute to disincentive new entrants to sell their businesses to large technology firms as the lower purchasing prices resulting from the bidding cap may make it less attractive for them to sell in the first place. In turn, this could benefit innovation to the extent that more choice coming from different companies could be offered to consumers.¹²²³ In certain cases, it may even bring about disruption that may not have had the time to develop independently had the innovation project been acquired at an early stage.¹²²⁴

C. Interim Summary

This chapter discussed the measures that could be taken by the European Commission to tackle killer acquisitions involving gatekeepers. While an M&A ban could provide a practical and resource-friendly solution, it was also acknowledged that such a measure would not be sufficiently differentiated and very far-reaching. Instead, this thesis suggests the introduction of a bidding platform which includes a bidding cap. By still allowing gatekeepers to take part in the bid whilst enabling smaller companies to participate in the bid, this approach creates a solution that is less far-reaching yet ensures a level playing field for all market players. Moreover, it may encourage smaller companies to become more active in M&A. At the same time, it could also incentivise up-and-coming firms to stay independent as the potentially lower purchasing prices resulting from the bidding cap may make it less attractive to sell in the first place, especially if the innovation exhibits a high potential for innovation.

¹²²² Art. 1(1) DMA; see also Recital 97 DMA.

¹²²³ [Part IV: Chapter 1: C. 2.2.b\).](#)

¹²²⁴ For more information on this topic, see [Part II: Chapter 2: D. 2.](#)

Conclusion

This Part sought to show how the Commission can tackle prevailing challenges arising from killer acquisitions in digital markets. Besides suggesting the introduction of a burden-shifting framework, which would allow the Commission to better embrace uncertainty prevailing in killer acquisitions whilst not placing the burden of proof on only one party, it found that the Commission ought to adopt a more polycentric understanding of innovation, which would allow it to more effectively protect the process of innovation. To this end, it needs to move away from the current analytical framework and design a merger analysis that allows it to consider complexity more effectively. Based on these findings, this Part suggested the adoption of a more complexity-theory-oriented approach which would enable the Commission to take a more inclusive view of competition and innovation concerns that is detached from the market definition and the classification of transactions as horizontal and non-horizontal. Instead, it would allow the European Commission to focus more effectively on the interconnectedness of competition at the market and industry levels.

To operationalise such an approach, this Part proposed the introduction of a proximity assessment which ought to serve as a basis for the subsequent legal test. The proximity assessment seeks to analyse the interconnectedness of the start-up's innovation with the incumbent's technological network. Thereafter, this Part developed a detailed two-tier test to establish harm where proximity is either affirmed or denied, respectively. Moreover, it proposed the introduction of an ex-post review which would allow the European Commission to intervene post-transaction in cases it finds the remedies offered to be insufficient to preserve competition and innovation.

Turning to the DMA, this Part suggested the introduction of a bidding platform, which would impose a duty on gatekeepers to publicly announce intended acquisitions in order to give other companies a chance to bid. By combining this approach with a bidding cap, this measure would create a more even playing field between gatekeepers and other companies whilst constituting a less radical approach than an outright M&A ban.

Overall, it can be concluded that new situations—such as those created by the digital economy—generally require new approaches. Accordingly, the Commission should not shy away from re-considering certain aspects of its current

approach and, instead, introduce novel solutions. After all, with the rise of digital markets, a new era of competition law has started—one that may even require thinking in terms of galaxies.

Part V:

Main Take-Aways

This thesis was dedicated to creating a deeper understanding of killer acquisitions in digital markets in the context of merger control. To address this topic, the following research question was investigated: *“Provided that killer acquisitions are harmful, is the current EU Merger Control Regulation (EUMR) appropriate to tackle killer acquisitions occurring in digital markets, and if not, in what ways does it need to be amended to better address the challenges in the future?”* To get to the bottom of this question, this thesis was structured into four main Parts. The first Part aimed to clarify the most important terms and give the reader a good understanding of the functioning of digital markets and merger control. This was followed by an in-depth economic analysis of the motivations and effects of killer acquisitions. Based on these observations, Part III embarked on a full-fledged legal analysis of such transactions. Its main aim was to elaborate on the main challenges such transactions pose to the current EU merger control framework. Moreover, it discussed to what extent the recently enacted DMA could contribute to addressing these challenges more effectively. Drawing on these findings, this thesis moved to the policy debate, where the main policy responses to the ongoing challenges posed by killer acquisitions were evoked, thereby including both a discussion of the EUMR and the DMA.

To summarise, the main findings of this thesis are the following:

- Killer acquisitions in digital markets are often non-horizontal and do rarely lead to the discontinuance of the target's innovation activities. Accordingly, they often do not meet the conditions of traditional killer acquisitions encountered in the pharmaceutical sector, making them the exception rather than the rule. Instead, killer acquisitions in digital markets more commonly occur in a flipped version whereby the target's innovation activities are integrated, and the incumbent's innovation efforts are either discontinued or foregone (reverse killer acquisitions).
- The rationale behind such killer acquisitions in digital markets is two-fold: on the one hand, they prevent potential future competitive and disruptive threats from growing independently. More precisely, they enable acquirers to control the development of the innovation activities of nascent companies and lead to the elimination of valuable streams of uncertainty that could have arisen in the absence of the transaction. On

the other hand, such transactions allow incumbents to exacerbate the expansion of the existing efficiencies of scope, thereby enabling them to further strengthen and expand their market position.

- On an industry level, killer acquisitions in digital markets can harm competition and innovation to the extent that they allow incumbents to keep in check the innovation activities of nascent firms that could have endangered their value chain in the absence of the transaction. To some extent, they allow incumbents to shape emerging markets in a way that favours them the most, thereby acting as architects of the digital world. At the same time, on a market level, they may also generate valuable synergies and efficiencies, eventually benefiting consumers. Consequently, killer acquisitions in digital markets may frequently exhibit an ambiguous nature, making their legal assessment highly challenging.
- The ambiguous nature of killer acquisitions may increase uncertainty in decision-making. Therefore, the consideration of the error-cost framework is highly important in such cases. In this regard, this thesis found that the traditional error-cost approach favours underenforcement to the detriment of potential new entrants. This is particularly ill-suited in killer acquisition cases since the underlying argument that markets self-regulate through new entrants may not apply to such cases whose very aim is to pre-empt the occurrence of such entry. Hence, leaning towards underenforcement is no valid option when it comes to killer acquisition cases. Instead, the Commission should take a stronger interventionist approach, thereby forcing companies to consider their second-best option, which, from a competition perspective, could constitute a more beneficial solution.
- Speaking of underenforcement, it is striking that the recently enacted new Guidance on Art. 22 EUMR represents an efficient means to close the long-standing enforcement gap caused by the prevailing high turnover thresholds. By allowing any Member State to report any suspicious transaction to the European Commission irrespective of whether it meets either the national thresholds or those provided by the EU, the new practice is generally highly welcome in the context of killer acquisitions. This applies especially in combination with Art. 14 DMA, which imposes a special obligation on gatekeepers to notify any intended transaction. Accordingly, by introducing Art. 22 EUMR in combination with Art. 14 DMA, the Commission seems to have implemented an effective mechanism to spot potentially harmful transactions. With

the recently issued decision by the European Court of Justice, which follows Advocate General Kokott's Opinion to allow the application of Art. 102 TFEU to cases that have not been notified, the current merger framework has been rendered even more effective.

- When looking at the substantive analysis of killer acquisitions, it seems that the European Commission's current legal framework poses various challenges to the assessment of such transactions. Most notably, this is due to the current: (i) high standards of proof, (ii) market definition, (iii) classification between horizontal and non-horizontal transactions, (iv) outcome-oriented assessment of innovation competition and (v) remedy framework. Thereby, one mutual source of problems is that killer acquisitions are fraught with considerable uncertainty, making predictions with sufficient certainty as required by the existing merger framework often highly challenging.
- To counteract these tendencies in the EUMR, this thesis suggests the following amendments:
 - i. **Introduction of a burden-shifting framework:** This thesis proposes the introduction of a burden-shifting framework, whereby the burden of proof would be first put on the European Commission and—after showing that a realistic perspective of harm is present—would shift towards the merging parties. They would then have to show that the effects established by the Commission are unlikely or that there is a realistic prospect that pro-competitive efficiencies dominate. Finally, it would be up to the Commission again to assess the arguments put forward by the merging parties and, thereupon, issue a final decision, which could be reviewed by the General Court. It is suggested that for finding a 'realistic prospect' of an impediment to competition, the Commission should apply the same standard of proof used in deciding whether or not to initiate the main examination, as was suggested by the UK Competition and Market Authority.
 - ii. **Adoption of a more polycentric notion towards innovation by relying on the complexity theory:** Given the currently outcome-oriented assessment of innovation competition, which is particularly owed to the fact that the existing analytical framework heavily relies on the neo-classical economic theory, this thesis suggests adopting a more polycentric notion towards innovation, which is more concerned about the process of innovation rather

than its outcome. To this end, this thesis advocates a stronger reliance on the economic complexity theory, which would allow the Commission to move away from its current focus on rivalry and, more broadly, consider uncertainty. As a result, the Commission would not have to consider whether the merging parties operate in a unique market or in separate markets or whether they are horizontal or non-horizontal in nature. Instead, it would allow it to adopt a more holistic approach whereby the reduction of uncertainty (and consequently of complexity) lies at the centre of the analysis.

- iii. **Developing a proximity assessment and a new legal test:** To operationalise a more complexity-oriented merger framework, this thesis suggests the introduction of a proximity assessment, which serves as a basis for the subsequent legal test. The proximity assessment essentially looks at how the target's innovation is interconnected with the technological network surrounding the incumbent's core technology. Depending on whether or not closeness is affirmed, i.e., whether a narrow or a wide killer acquisition is present, this thesis proposes the assessment of different criteria to ascertain competitive harm. Important criteria include whether the target holds disruptive potential, whether it may strengthen the incumbent's position in the technological space or whether it may allow it to engage in anti-competitive leveraging or exclusionary practices.
- iv. **Introduction of an ex-post review of remedies:** In addition to the aforementioned aspects, this thesis proposes the introduction of a provision which, in start-up acquisitions, allows the Commission to modify given remedies ex-post if it finds that the remedies attached to the approval of a transaction did not have the desired effects. This approach could be combined with a new provision that allows the Commission to bind the merging parties to the evidence and intentions submitted at the time of the transaction, thereby requiring the companies to inform it about any diverging behaviour beforehand. To ensure effective enforcement of these measures, the Commission could also think about expanding its monitoring time frame to medium and long-term monitoring.

- With regard to the DMA, this thesis found that by imposing the obligation on gatekeepers to inform the Commission about any mergers planned pre-implementation, it effectively complements the new practice of Art.22 EUMR. Whilst constituting a step in the right direction, it was, however, also shown that, without any additional obligations in the DMA, the current approach alone may not be sufficient in the fight against killer acquisitions. For this reason, this thesis suggests the following:
 - i. **Introduction of a bidding platform for gatekeepers:** This thesis proposes the introduction of a bidding platform which imposes the duty on gatekeepers to make all intended acquisitions public pre-transaction. Such an approach would allow other, smaller companies to take part in the bid and benefit from the information advantage gatekeepers have vis-à-vis them.
 - ii. **Combining the bidding platform with a bidding cap:** To render the bidding platform effective, the Commission should combine it with a bidding cap for gatekeepers, which prohibits gatekeepers from bidding more than a certain percentage higher than the stand-alone value of the start-up concerned. Such a measure would reduce the prevailing asymmetrical bargaining and information power between gatekeepers and other smaller firms, thereby effectively complementing the EUMR.

To come back to the main research question, the answer can therefore be summarised as follows: killer acquisitions in digital markets can harm innovation and competition. Although the current merger control regime is apt to spot such transactions, its current tools are inappropriate for analysing them on a substantial level. To more effectively address the challenges posed by such transactions in the future, the European Commission needs to lower the high standards of proof by introducing a burden-shifting framework and frame its merger control regime more according to the economic complexity theory, which is necessary to move away from the currently strong reliance on rivalry and more effectively assess uncertainty. To this end, this thesis has developed a proximity assessment focusing on the interconnectedness of the target's innovation with the incumbent's technological network. This exercise should allow the Commission to better account for the interconnectedness of competition occurring on the market and the industry level. Depending on whether or not proximity is found, i.e., whether a narrow or wide killer acquisition

is present, this thesis suggests two different legal tests. They aim to provide the Commission with tools to ascertain harm emanating from killer acquisitions more systematically. Together with a remedy framework that allows the Commission to engage in long-term monitoring whilst enabling it to modify given remedies ex-post, this thesis concludes that the adoption of these instruments would create a more effective merger control regime that is better equipped for the fight against killer acquisitions in digital markets. These measures could be further reinforced by introducing to the DMA a bidding platform combined with a bidding cap, which would require gatekeepers to publicly announce their intention to acquire a nascent firm, thereby allowing other companies to enter the bidding race too. This would contribute to creating a more even playing field in digital markets, levelling out gatekeepers' bargaining power and information advantages.

Overall, this thesis hopes to inspire and encourage European lawmakers, the European Commission and the European Courts to adopt a more 'complexity-minded'¹²²⁵ merger control regime in the future and put the protection of the innovation process at the centre of their concern.

¹²²⁵ Note that this term was taken from Petit and Schrepel.

Curriculum Vitae

Giulia Aurélie Sonderegger, born in 1995, completed her A-levels at Kantonsschule Zürcher Unterland in 2014. After that, she graduated with a bachelor's and master's degree from the University of Zurich in 2018 and 2020 and an LL.M. in competition law from the Queen Mary University of London in 2019. During her studies, she completed three internships: two at law firms in Zurich in 2015 and 2017 and one at the Organization for Economic Co-Operation and Development (OECD) in 2020. She then started her PhD at the University of Zurich and got the opportunity to work as a research assistant at the Chair of Prof. Heinemann. Besides that, she also worked part-time in financial crime compliance at Credit Suisse. She published several articles in the field of competition law.

In her PhD thesis, Giulia Aurélie Sonderegger analyses killer acquisitions, which, in short, are acquisitions that aim to pre-empt potential future competition at an early stage. While this phenomenon was originally discovered in pharmaceutical markets, this thesis exclusively discusses killer acquisitions in the context of digital markets, thereby primarily focusing on the current European Merger Control Regulation (EUMR). The main research question is whether the EUMR is appropriate to tackle killer acquisitions occurring in digital markets, and if not, in what ways it needs to be amended to better address the challenges in the future. To tackle this question, the author assesses both the economic and legal effects of killer acquisitions on merger control in digital markets and, based on her findings, suggests amendments to the current European merger control regime. For a more comprehensive analysis, this thesis also includes an assessment of the recently enacted Digital Markets Act (DMA) to ascertain whether this regulation may serve as an additional tool to remedy such transactions.