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"Pathways to growth: Strategic motivations behind tech M&A in the age of digital ecosystems"

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1. INTRODUCTION

Over the decades, digital transformation has profoundly reshaped economies and societies, altering how individuals, firms, and institutions interact. Businesses – thanks to ICT and the latest innovations – have increasingly moved online, thus giving rise to a digital economy where value is created and exchanged in a digital space, supported by interconnected infrastructures. This transition made it possible for digital markets to be born, hence creating spaces where trading of both digital goods and digital services and tangible goods and non-digital services occurs. Boundaries between industries became nuanced, globalization accelerated, and new business models were born.

In this revolution, many players started getting power, providing a wide range of products and services but also facilitating the interactions and the exchange of value between different user groups. Thanks to these players, strong interconnected networks of actors, products, services, and digital platforms originated under the expression of "digital ecosystems." The simplest examples of these new digital paradigms are Big Tech companies - Apple, Amazon, Microsoft, Google, and Meta – which operate across different industries, provide wide offerings of tangible/nontangible products and services, and connect many businesses, customers, and diverse actors.

Digital ecosystems growth was partially fostered by mergers and acquisitions (M&A) that allowed digital companies to expand their scale and customer base, acquire critical capabilities, stifle competition, and diversify their product/service portfolio. On the other hand, this expansion raised concerns around topics like market contestability, innovation, use of personal data, and consumer welfare, attracting regulatory authorities' attentions.

This thesis investigates the role of M&A in the expansion of digital ecosystems, with a particular focus on European-born players.

The analysis starts with the presentation of digital markets, platforms, and ecosystems, showing the characteristics of these markets as well as regulatory challenges posed by these players and how the European Commission tries to regulate them.

Second, the study shifts the focus towards M&A activities – carried out by digital players - and their role in shaping ecosystem formation and expansion. Moreover, the effects on competition and consumers - after these extraordinary operations are completed – are presented, combined with the EU's competition law and theories of harm used to contrast

negative effects stemming from concentrations. In this sense, the new ecosystem theories of harm are introduced.

Third, the thesis explores the *Booking/eTraveli* case, a landmark decision in which the European Commission prohibited an acquisition by applying these new theories, thereby demonstrating a shift in the antitrust treatment of digital ecosystems. In addition, considerations and criticisms about how the ecosystems theories of harm have been applied to this case will be showcased.

Finally, alongside theoretical insights, this work contributes to the previous literature through qualitative research involving European-born digital players – firms that are establishing or have established their own digital ecosystems – and the strategic rationales they followed when pursuing M&As. By analyzing their M&A transactions – through firsthand interviews and secondary data - the thesis identifies common pathways and divergences across different industries, thus contributing to a better understanding of how digital ecosystems emerge and evolve through extraordinary operations.

However, in the last section, some possible future developments and studies about the topic are suggested as well.

2. DIGITAL MARKETS, PLATFORMS, AND ECOSYSTEMS

2.1. Key features and market dynamics

The rise of digital markets, accompanied by the birth of digital players and their related ecosystems, has represented a paramount disruption in the modern era: their onsets brought along the introduction of new business models, a change in the competitive balances, and several regulatory challenges.

An overview of their main characteristics and market dynamics is fundamental to understanding why these new paradigms are gaining so much relevance in today's economy.

Nevertheless, before illustrating that, it is appropriate to take a step back by discussing the factors leading to these digital revolutions, which find their roots in a widely spread expression comprehending a lot of meanings and developments: digital transformation.

The world as we know it has been evolving continuously over time, and one of the key drivers has been (and is) the digital transformation. This expression refers to *"the adoption of digital technology to transform services or businesses,"* achieved by replacing manual processes with digital ones or substituting outdated digital technology with upgraded digital technology (Deloitte, 2021).

The digital transformation takes place when firms leverage digital technologies to create new or modify existing business models and processes or to change organizational structures, resources, or relationships with internal or external actors (Brynjolfsson & Hitt, 2000; Frank et al., 2019; Loebbecke & Picot, 2015; Vial, 2019).

The origin of this phenomenon can be sought in the 1980s and early 1990s, when researchers examined the effects of adopting information technology (IT) on organizational structures and hierarchies and on innovation and performance (Bloomfield & Coombs, 1992; Drucker, 1988; Johnston & Vitale, 1988; Robey, 1981). IT-enabled business transformation was further fostered by computer technology and Internet spread (Chatfield & Andersen, 1997; El Sawy et al., 1999; Markus & Benjamin, 1997). Nowadays, many other emerging technology trends – such as social media, mobility, the internet of things (IoT), cybersecurity, big data & analytics, cloud computing, robotic process automation (RPA), artificial intelligence (namely machine learning), blockchain, and so forth – are driving digital transformation (Tang, 2021).

Broadly speaking, it is a type of business transformation that is driven by emerging technologies, which allow for new, innovative business models, drive sales growth, and can even be *"a source of competitive advantage by giving firms the chance to fully digitize, transform, and grow."* However, these technologies' applicability heavily depends on the type of organization and its industry (Tang, 2021).

This premise is crucial to introduce another relevant topic – somehow linked to and supported by digital transformation - that stood out in the modern era and changed the way businesses operate, how consumers engage with markets, and how economic value is created and exchanged by impacting existing economic processes, systems, and sectors (Dahlman et al., 2016): the rise of the digital economy.

Nevertheless, conceptualizing the digital economy is not easy, as it is increasingly interwoven with the physical or offline economy, making it more and more difficult to clearly outline its boundaries (European Parliament, 2015). Moreover, there is also a problem of scope: as more and more services, manufacturing, and even primary production activities rely on information and communication technologies (ICTs), the digital economy might just become "the economy" (Bukht & Heeks, 2017).

The attempt of framing this concept leads to the European Commission's (EC) definition (2013a): "*an economy based on digital technologies."*

In more detail, another definition depicts it as *"the economic activity that results from billions of everyday online connections among people, businesses, devices, data, and processes."* Notably, it is supported by hyperconnectivity, meaning the growing interconnectedness of people, organizations, and machines that results from the Internet, mobile technology, and the IoT (Deloitte, 2021). Indeed, in the 1990s, economic changes were often supported by the emergence of the Internet, which remains a foundation for growth of the digital economy; in addition, during the 2000s and 2010s, a succession of new ICTs has diffused and underpinned this change (OECD, 2015).

Moreover, the increased use of digital goods and services, often as a replacement for physical goods and non-digital services, is also responsible for this evolution, as well as the digitization of data and digital processing and storage (Øverby & Audestad, 2021).

In the digital economy, firms and their business models are becoming progressively more connected through ownership rights, increasing exchange of data, and technological infrastructure (Kauffman et al., 2010; Sommarberg & Mäkinen, 2019). This growing

interconnectivity between firms results in a higher reciprocal reliance (Barua et al., 2004; Kohtamäki et al., 2020).

The expansion of the digital economy, supported by new technological paradigms and digital transformation, has profoundly altered traditional economic structures. Economic transactions increasingly moved online, as companies adopted digital technologies to improve efficiency, optimize processes, and innovate new services.

The shift towards this new paradigm is fundamental to introducing another relevant topic: the birth of digital markets.

A digital market may be defined as "*a mechanism for online trading of both digital goods and digital services and tangible goods and non-digital services"* (Øverby & Audestad, 2021). And yet, "*an internet-based structure where demand and supply forces operate, which allow sellers and buyers to interact"* (Tzanou, 2020).

First and foremost, it is important to note that not all interactions occurring in the digital markets imply an economic performance as a consideration for a supply of goods and services. In fact, trades performed online between a supplier and a consumer and involving any kind of financial activity are regarded as e-commerce. Therefore, even though a trade is done in a digital market, an exchange of goods and services without the above-mentioned condition cannot be considered as e-commerce. An example is the use of Facebook, where the user is not charged for accessing it (Øverby & Audestad, 2021).

Defining and concretely articulating the pure concept of digital markets is a complex task. In fact, many scholars, as well as the European Commission, tend to focus their studies on those entities that – with their offers of digital goods and services - led to the emergence of digital markets. These entities are, at the same time, the key players involved. Namely, digital platforms and their related digital ecosystems.

Digital technologies, alongside the above-mentioned consequences they generated, enabled companies to remotely exploit and monitor resources that reside outside the scope of the firm. This means that organizations no longer need to innovate with their own resources or own all the assets they offer in the market. This premise is fundamental to stating that the main locus of value creation and capture shifts away from the traditional firm and its supply chain to the one of the digital platforms (Gawer, 2020).

Digital platforms are online intermediaries that bring together at least two distinct user groups. The purpose of a platform is to draw the attention of many consumers by

organizing products, services, content, or other commercial or non-commercial offers to facilitate the search process and enable better matches. Examples of this are search engines, booking platforms, social media platforms, ride-sharing, and accommodation-sharing platforms, or shopping platforms (Krämer, 2020). When two distinct user groups interact on a platform to produce mutual benefits for each other, the platform is two-sided, while the presence of other user groups gives rise to a multi-sided platform (Øverby & Audestad, 2021).

The multi-sidedness (not the two-sidedness) allows platforms to operate in a way whereby one user group (typically the end consumers) does not pay a monetary price for accessing the platform. Revenues come from the other market side (for example, the business users). On the one hand, traditional business models are abandoned: users are not charged for the service they are using. On the other hand, this business model provides platforms with incentives to collect personal data from end users in order to leverage this information to enhance the monetization on the other side of the market (for instance, through targeted advertisements). Furthermore, personal data collected are also essential to improve the quality of the services offered, especially when personalization is a factor. In addition, the steady inflow of data may entail a comparative advantage when pursuing data-driven innovations (Krämer, 2020).

Indeed, the collection, storage, and usage of vast amounts of data are critical to the business models of most digital platforms as well as ICTs, which are crucial to facilitating interactions between users. This, together with the generation of economies of scale and scope and network effects, may lead to winner-take-all monopolistic positions (Gawer, 2020), an issue that is going to be analyzed in the next chapter.

Moreover, digital platforms often operate both as intermediaries and as business users on the same platform. By making the most out of their position, they are able to drive consumers' attention towards their own upstream or downstream content, product, or service. In doing so, independent providers may be impacted. This phenomenon is referred to as self-preferencing (Krämer, 2020), and, especially when a platform has a dominant position, it may abusively apply this strategy (Gawer, 2020).

The following part analyzes the relationships between user groups on a platform. Their engagement drives the just-mentioned network effect, referred to as the value a new user adds to existing users in a network (Shapiro, 1999).

This effect is positive if the market feedback generates a perceived increase in value (for instance, more users) that stimulates further increase in value (more users). Facebook is an example where the value of the network increases as the number of users surges. Conversely, the negative facet of this effect occurs when the market feedback causes a perceived decrease in value (for example, fewer users) that stimulates further decrease in value (fewer users). A real scenario is presented in the end of life for multiplayer online games: the more players leave the platform, the more others are incentivized to do the same (Øverby & Audestad, 2021).

In addition, network effects may be direct or indirect. In the first case, users induce value on other users by means of direct interaction between them; in the second one, the aggregated behavior of the users induces value on other users without a direct interaction. Examples of direct network effects are interactions among members of social media or between buyers and sellers in multisided markets. Examples of indirect network effects are improvements of service quality due to user feedback or product reviews (Øverby & Audestad, 2021).

Øverby & Audestad (2021) keep going with their analysis by taking into account same-side or cross-side network effects. The first ones imply that a greater number of users leads to a growth in value for other users in the same group. Examples are social networks and multiplayer online games. The second ones result from a user base expansion in one group, which increases value in other user groups. These network effects arise only in multi-sided markets. An example is third-party content or service providers in social media. The availability of, for instance, games on Facebook increases the value for Facebook users as well as the value for the providers of these games. In general, both same-side and cross-side network effects may be direct or indirect and positive or negative.

As has emerged so far, digital platforms operate in an extremely dynamic and unpredictable environment; consequently, innovation is continuously incentivized to keep offering high-end products and services (Krämer, 2020). They base their success on the availability of constantly evolving information technology, such as cloud computing, in-memory databases, and analytical solutions for big data (Hein et al., 2020).

Another factor that influences the performance of digital platforms is the multi-homing behavior of users: this means that users can join several platforms (Belleflamme & Peitz,

2019), a market dynamic that may reduce the exclusivity and dominant-firm equilibria (Koh & Fichman, 2014; Caillaud & Jullien, 2003).

However, to boost a platform's adoption, owners employ different strategies. One of them consists of subsidizing one side and charging the other one (Rochet & Tirole, 2003; Parker & Van Alstyne, 2005; Eisenmann et al., 2006; Bolt & Tieman, 2008), as already introduced above. This strategy is widely used in launching practical platforms. For example, Microsoft incurred a total loss of more than US$4 billion in the first four years after its Xbox gaming platform rollout, primarily by allowing consumers to pay a market price below the manufacturing cost (Dou & Wu, 2021).

Moreover, another interesting market situation that may arise is the competitive bottleneck: here, one side (for example, sellers) can multi-home, while the other side (for example, buyers) single-homes (chooses only one platform). This creates a situation where platforms have monopoly power over access to single-homing users, allowing them to charge high prices to the multi-homing side while competing intensely for single-homing users by offering lower prices or even free services. This is because multi-home users can find the other side entity exclusively on this platform, as it single-homes. This is why platforms often prefer exclusivity agreements to prevent sellers from multi-homing, as this allows them to retain control over both sides of the market. Conversely, from a buyer's perspective, multi-homing sellers can be beneficial when more sellers are accessible, leading to better choices. However, if platforms respond by increasing fees on the buyer side, the overall benefit may diminish. (Belleflamme & Peitz, 2019).

Furthermore, a consideration to be done concerns competition among platforms: they have to take into account the effect of a change in participation levels on one side because this may influence participation levels on the other side (namely, the network effects previously discussed). For instance, if a platform attracts an agent (from either side) away from a competitor onto its site, this platform becomes more attractive to groups on the other side, as more transaction partners become available on the platform's site and fewer partners are available on the competing site (Belleflamme & Peitz, 2019).

Summarizing digital platforms' main features requires accuracy and attention to the many market situations arising from actors' interactions. Delving into these digital entities is a complex task, considering their flexibility and dynamism.

Over the years, platforms have been studied from single paradigms such as economics (Jiang et al., 2018), technical (Tiwana, 2015), business (Parker & Van Alstyne, 2017), and social (Thies et al., 2016).

However, many authors suggest a wider point of view and consider them as part of a broader context, wherein they represent the key components. Indeed, by connecting many user groups and facilitating interactions, digital platforms gave birth to digital ecosystems composed of several actors who are aligned and agree to pursue a focal value proposition (Adner, 2017), who exhibit varying types of mutual dependencies, and who play different roles (Jacobides et al., 2018). This variety brings along various types of skills and capabilities (Helfat & Raubitschek, 2018). As a result, in this new view, digital platforms rely heavily on autonomous agents that contribute to the digital platform's value proposition (Teece, 2018).

In an extended perspective, a digital ecosystem is composed of other additional stakeholders. First, the Internet service providers (ISPs) and the network providers (NPs) own the global ICT infrastructure, which is the carrier of digital services and consists of interconnected networks of networks, including the Internet, mobile networks, wireless networks, local area networks, fiber networks, and satellite networks. Second, device providers (DP) who provide users with equipment to access the Internet. Third, authorities who enact legal regulations affecting a digital platform and the actors revolving around it (Øverby & Audestad, 2021).

Understanding this new standpoint is essential to delve into how digital transformation reshapes markets, how platforms evolve beyond their initial functions, and how businesses leverage ecosystem-based strategies to gain a competitive advantage in the digital economy.

These digital entities transcend borders, locations, and industries. Ecosystem members collaborate and compete among themselves and perform economic activities, often situated in different countries and orchestrated by the platform owner. The absence of geographical and market boundaries allows an open and flexible interaction between many actors. This results in the creation of a competitive advantage and knowledge and risk sharing. Overall, resources shared within the digital ecosystem are not necessarily owned by the platform leader; indeed, it oversees organizing, synthesizing, and integrating all globally available resources (Nambisan et al., 2019). Hence, the

significance of digital ecosystems transcends traditional value chains and conventional industry structures (Subramaniam et al., 2019). And yet, it is important to highlight again the essential role of new digital infrastructures that further enhance the capability of digital ecosystems to engage in such fluid organizing (in terms of both structure and process) for innovation and entrepreneurship (Nambisan, 2017). Nevertheless, while such new digital technologies help reduce the role of physical distance, distances in terms of the quality of digital infrastructures (and even technology standards) could arise and create issues (Nambisan et al., 2019).

Among an ecosystem's participants, interdependencies exist and can have both economic and structural components (Kapoor, 2018; Adner, 2017). On the one hand, the economic ones describe the type of complementarities of products or services characterizing the relationship between a platform and actors in an ecosystem. Jacobides et al. (2018) focused on unique and supermodular complementarities. In the former, product A does not function without product B. More generally, the value of product A is maximized with product B. This relationship can be one-way. Thus, product A requires a particular product or service B. Moreover, it can also be two-way: products A and B both require each other. In the latter, an increased amount of product A makes product B more valuable - where A and B are different products or services – but one product is not essential to the functioning of the other.

On the other hand, the structural components present how actors interact with value proposition and value creation. By focusing on this topic, recent studies have underscored three structural elements of ecosystems: activities, actors, and architectures (Kapoor, 2018; Adner, 2017).

First, activities are discrete actions that determine how value is co-created in an ecosystem. Examples are the development of new applications or the provision of services. Second, actors are agents that can be both complementors and consumers who undertake activities and produce different offers. As complementors, they provide complementary products or services to contribute to a platform's value proposition (Kapoor, 2018), whereas, as consumers, they benefit from the service and, in turn, contribute to the platform's value proposition by providing insights about how and which complements are used (Lusch & Nambisan, 2015). Third, the architecture concerns the interactions that orchestrate the exchange between the supply and demand sides of an

ecosystem. The result is either a platform- or product-based ecosystem. In the first case, there are autonomous agents, such as complementors, that contribute complementary products or services; the platform owners establish ground rules to orchestrate the interactions. In the second case, product-based ecosystems entail one-sided market interactions between a firm and consumers (Kapoor, 2018).

To sum up, digital platform ecosystems often comprise a platform owner who takes care of governance mechanisms to facilitate value creation on the digital platform and an ecosystem of autonomous complementors and consumers who engage with the platform owner (Hein et al., 2020). These are examples of product-based ecosystems, to be consistent with the previous statements.

Another fundamental theme to discuss is the platform ownership, an essential point to be understood to have a clear-cut outlook of a digital ecosystem.

It does not merely imply knowing which legal entity owns the platform; it also relates to the distribution of power in the ecosystem and describes the relationships among partners within the same. First, there are centralized digital platform ecosystems controlled by a single owner, such as Facebook. In this case, power is centralized, and only the platform owner defines, establishes, and maintains governance mechanisms. With a growing ecosystem, some digital platforms have come to dominate their markets, and their power has become overwhelming (Hein et al., 2020). When having great influence, they may also act as bottlenecks to control and limit interactions (Boudreau, 2010).

Second, digital ecosystems can be composed of a group of actors owning and running the platform, where the power is distributed over multiple stakeholders (Bazarhanova et al. 2019). Third, in the decentralized setup, the governance is shared among peer-to-peer communities: in this case, users can directly affect the future direction of the ecosystem (Hein et al., 2020).

As presented above, digital platforms create value by helping complementors and consumers (part of the ecosystem) to locate and interact with each other and exchange value - in a manner beneficial for both parties - by acting as an intermediary (Evans, 2012). This value-creating model is related to a way of envisaging platforms called “the industrial economics perspective”: this point of view has conceptualized platforms as a set of rules and architectures that serve to connect two or more sets of entities and mediate interactions and transactions between them (Rochet & Tirole, 2003, 2006).

Moreover, there is also "the product development perspective," tied to another value-creating mechanism. In this view, platforms are seen as a shared set of components, technologies, and other resources, arranged in modular architectures, that facilitate or serve as a venue for innovation (Gawer & Cusumano, 2002). Digital platforms' innovation capabilities enable complementors to create solutions complementary to the platform core (Tiwana, 2015). In this system, the platform owner provides resources like development tools, which are used to co-create value-adding complements. Therefore, supported by platform owners, actors carry out some changes with their individual innovation capabilities (Ghazawneh & Henfridsson, 2013; Nambisan et al., 2019).

This phenomenon is referred to as generativity (Henfridsson & Bygstad, 2013; Yoo et al., 2010). It is defined as the "*overall capacity to produce unprompted changes driven by large, varied, and uncoordinated audiences"* (Zittrain, 2005).

New opportunities brought about in a digital ecosystem are often collectively created and shaped by multiple members. Despite different actors exploiting each other to pursue different purposes, they are also incentivized to cooperate to reduce risk, enhance learning, and fuel further innovations (Nambisan et al., 2019).

This strict relationship between platform owners and ecosystem actors raises another relevant point of discussion: complementor autonomy, defined as *"the degree of freedom complementors have when co-creating value with the digital platform"* (Ye & Kankanhalli, 2018). High-autonomy complementors engage in a loosely coupled relationship in which they are independent and separate from the digital platform, whereas low-autonomy complementors are part of a tightly coupled strategic partnership in which both the platform owner and the complementor are mutually dependent and aligned (Orton & Weick, 1990). However, these partnerships are characterized by high mutual trust, a commonly defined goal, and contracts (Steensma & Corley, 2000).

The complementor-platform owner relationship displays another interesting facet. As complementors' functionalities represent a competitive advantage, platform leaders may decide to embed and internalize these functionalities into those of the core platform and transform them into a firm-specific advantage (Nambisan et al., 2019).

An essential addition to this speech - strictly related to the discussion about platform ownership and distribution of power - is the previously mentioned theme of governance.

Platform owners act as the private regulators of their ecosystems, effectively running the business relationships, data exchanges, and transactions they facilitate. They establish the rules through which the various actors (be they individuals or organizations) interact, decide what behaviors to encourage or discourage on the platform, and choose how to enforce them. As such, they design the business environment and exert significant control over members of their ecosystem. Managing correctly many relationships among several actors becomes fundamental for digital ecosystems' success, particularly when complexity and risks increase as the ecosystem grows (Adner & Kapoor, 2010).

Governance is an essential component of platform companies' job, and it can generate significant value for users (Gawer, 2020).

Nevertheless, it is not limited to hard rule setting. For platform firms, it also consists in sending credible commitments to ecosystem members so that they continue to partner with the platform. This is especially important when platforms face competition from other platforms (Gawer, 2020).

This theme is extremely relevant: there is a shift in focus from inter-firm competition to inter-platform (and ecosystem) competition. These entities' success depends on portable (across borders) advantages. The latter arise from the common or shared assets and resources that constitute the particular platform, the complementary assets and resources (contributed by ecosystem members) that enhance the value of the platform, as well as exclusive access to specific groups of actors (including customers). Moreover, members' reputation and brand recognition, members' relational assets with external entities, and members' prior experiences and intellectual assets are determinant in gaining field over rivals, too. (Nambisan et al., 2019).

Furthermore, resource portability and sharing also allow small firms to become international and transform into big digital platforms, which share risks and costs throughout the ecosystem and become able to compete with other global rivals (Coviello et al., 2017; Luo & Tung, 2018). In addition, they enable digital ecosystems to adapt rapidly to fast-changing markets and industries (Nambisan et al., 2019).

So far, we have mostly illustrated the advantages and opportunities associated with the rise of these new digital paradigms. However, while digital platforms and ecosystems offer significant benefits in terms of connectivity, efficiency, and innovation, they also present a range of challenges and risks.

First, the dependency of the platform leader on the other ecosystem's members (and vice versa) exposes them all to contagious innovation, reputational, operational, and legal risks. In addition, external instabilities (for instance, natural disasters, power shortfalls, political instability, and social tensions) affecting one international partner can affect the others as well, with a quick spread. This is why a flawless ecosystem orchestration represents a critical capability to mitigate potential negative consequences (Nambisan et al. 2019).

Second, making the ecosystem more open and more open raises concerns about intellectual property rights due to proprietary technological assets being shared across several actors. This openness is also intended as decisional openness: on the one hand, decentralizing decision-making could foster member loyalty and quality of contribution. On the other hand, geographical distance and cultural diversity of ecosystem members may represent an issue (Nambisan et al., 2019).

Third, costs of market entry and exit represent an additional risk. Establishing and maintaining a platform and orchestrating the associated ecosystem – and the underlying relationships and activities - require considerable upfront investments whose returns may not be evident in the short term. Similarly, it can be costly and difficult for the platform leader to exit from long-term strategic relationships in a cross-national platform-based ecosystem (Nambisan et al., 2019).

Nevertheless, a relevant part of scholars' discussion about digital ecosystems is related to issues such as market concentration, data privacy concerns, algorithmic biases, and competitive imbalances. Therefore, in the following chapter, we will explore the regulatory challenges posed by digital platforms and ecosystems.

2.2. Regulatory challenges

Large digital players often operate beyond traditional regulatory frameworks, raising concerns related to market dominance, data privacy, competition, and consumer protection. In this regard, the need to ensure that digital markets remain fair, competitive, and transparent does not cope with several actions enforced by digital ecosystems.

The regulatory issues that will be shortly illustrated mostly stem from the largest tech firms' behaviors. Among them, it is relevant to name the Big Tech companies, a term used to refer to the US-based, multinational corporations Apple, Amazon, Microsoft,

Alphabet/Google, and Facebook/Meta (Birch & Bronson, 2022), whose cumulative market capitalization amounts to $13.3tn as of July 2025 (Statista, 2025).

Overall, these entities (together with their related digital ecosystems) have become so large that they are *"wealthier and more influential than many countries"* (Gawer, 2020). This fact imposes significant considerations on the consequences derived from their actions.

First and foremost, there is broad agreement that different forms of regulation, beyond the conventional competition law framework conceived for traditional markets, are needed to address the risks posed by digital ecosystems. Traditional competition law is often inadequate or insufficient to deal with the realities of digital markets (Jenny, 2021). The traditional drivers, such as price efficiency and low cost, are now being replaced by data-related innovation and differentiation by platforms and ecosystems (Jenny, 2021).

Moreover, the rise of ecosystems in the digital economy raises concerns about which unit of analysis should be used to measure their behavior correctly. Namely, the economic theory that used "market" as the parameter to outline the perimeter of their deeds seems to have become outdated. In fact, these entities are capable of moving from market to market, as if the boundaries between industries were somehow permeable to them. This is why a new unit of analysis is needed to assess these entities' actions: in this sense, considering the digital ecosystem revolving around a main digital platform might be a better starting point to gain a wider outlook. Notably, this new paradigm cuts across markets and embraces all actors coming from different industries who contribute to the value creation on a platform (Gawer, 2020).

Having said that, an important topic of discussion – introduced in the previous paragraph - concerns platforms' tendency to act as regulators within their ecosystem. This poses relevant competition issues. Indeed, because of their position of dominance, they have the responsibility to ensure that their rules do not impede free, undistorted, and vigorous competition without objective justification. Therefore, a dominant platform that sets up a marketplace must ensure a level playing field on this marketplace and must not use its rule-setting power to determine the outcome of the competition (Crémer et al., 2019).

Nevertheless, an influential report on Big Tech companies published by the US Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary (2020) found common problems in these giants' business practices,

contrasting with the general principle just stated above. Notably, each of them acts as a gatekeeper over a key distribution channel. By controlling access to markets, these giants can influence the economy, thus altering competition. They not only exert great power, but they also abuse it by charging high fees and imposing contract terms – which are reasonably anti-competitive - on actors being part of their ecosystems.

Furthermore, the privileged position as intermediaries they hold is also exploited to entrench and expand their dominance over time. By controlling the infrastructure of the digital age, "*they have monitored other businesses to identify potential rivals and have ultimately bought out, copied, or cut off their competitive threats"* (US Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary, 2020).

The analysis continues by presenting other regulatory challenges deriving from network effects, a distinctive feature of digital platforms.

As seen in the previous paragraph, these effects lead to rapid growth. At the same time, they can also raise competitive issues in digital markets because, under certain conditions, phenomena like customer lock-in[1] and winner-take-all[2] or winner-take-most market outcomes can occur (Gawer, 2020). This has been witnessed in the case of Facebook, Amazon, and other platform companies where government agencies in different countries reacted to their monopolistic behaviors, favored by network effects (Nambisan et al., 2019).

Indeed, strong network effects can prevent a rival from displacing an established incumbent. First, this happens because it may be difficult or expensive for users to multi-home. Second, the complexity in switching away from a platform to another one is also influenced by the lack of data portability[3] or lack of interoperability[4]. When these conditions are met, platforms tend to become monopolists (Gawer, 2020).

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[1] A phenomenon defined as follow: "*by providing services of asset specificity, customers rely on suppliers and are locked-in without changing to other suppliers. Customers are locked-in by establishing long-term relationships with them in servitized companies"* (Wang et al., 2021).

[2] A situation in which a company achieves the largest share of the market, which is generally not 100%, but quite close to it. One or two or a few other companies may be in play, but they tend to be niche players. The author himself (Jain, 2024) states that this is a phenomenon predominantly happening in digital markets.

[3] Data portability aims to enable users to easily and securely transfer personal data from one service to another service and reuse it without any restrictions, and thereby advances users' opportunities to own, control, and manage their personal data (Sunyaev et al., 2021).

[4] In general, interoperability refers to the degree to which a software system, devices, applications or other entity can connect and communicate with other entities in a coordinated manner without effort from the end user. This is often related to things like data access, data transmission and cross-organizational collaboration (Lewis, 2023).

As digital ecosystems continue to expand, the way platforms govern these interconnected networks – a theme previously introduced - raises important considerations.

Other than what has been presented above, running ecosystems also entails how platform firms handle users' personal data and how they protect their privacy (Gawer, 2020). In this sense, they extract valuable information from the people and businesses that rely on them (US Subcommittee on Antitrust, Commercial and Administrative Law of the Committee on the Judiciary, 2020). This ever-increasing collection and analysis of data creates privacy risks for individual users and can have implications for society (Gawer, 2020). Nowadays, data can be considered a medium of commercial and economic exchange. Even though the "value of data" is hard to quantify using traditional metrics, there is a growing realization of its role in economic transactions (Brynjolfsson & Collis, 2019).

Dominant platforms owning vast amounts of user data benefit from advantages stemming from (data) network and lock-in effects (Gregory et al. 2021) *"that eventually make them 'data monopolists' and virtually incontestable gatekeepers"* (Autor et al. 2020). The process is self-reinforcing because most powerful players can exploit user data to create data-driven innovation and powerful lock-in effects. Consequently, the ability to apply data-driven learning and advanced AI methods enables them to own large proprietary databases *"to continuously improve, innovate, and adapt their service offerings"* (Gregory et al. 2021). As a result, the ability to meet and shape user demands and the quality of goods and services continuously increase, as well as market power, anticompetitive practices, and, more importantly, the risks of surveillance and security breaches (Kira et al., 2021). Conversely, the ability of smaller competitors to survive in the market, including those with services that are more respectful of users' privacy, continuously decreases (Kranz et al., 2023). Related to this, some have suggested that the quality of a product or service offered should be used as a standalone metric and its (positive or negative) assessment based on the extent and the scope of data collection and its influence on privacy (OECD, 2018). Indeed, in the *Microsoft/LinkedIn* case, the EC recognized that data privacy is "a significant factor of quality" and, therefore, should be considered as a parameter that companies can either compete on or stifle competition[5].

[5] EC Press release, 'Mergers: Commission Approves Acquisition of LinkedIn by Microsoft, Subject to Conditions' (IP/16/4284, 6 December 2016).

Furthermore, weak competition and concentrated market power may lead to reduced levels of data protection (Kerber, 2016). Indeed, consumers' privacy preferences are likely to be better served in a market with several players (Esayas, 2018), whereas where a few companies have dominance, they have little incentive to compete on data privacy and are more likely to engage in excessive data collection and offer less privacy protection than in a competitive market (Condorelli & Padilla, 2020).

Once again, even if dominant platforms unfairly exploit their market position or disregard user privacy, customers are discouraged from moving to alternative sites because of high lock-in effects and switching costs (Sunyaev et al., 2021).

Another privacy challenge is related to the (re)use of data for doubtful purposes, which also raises questions regarding data ownership and corresponding accountabilities (Fadler & Legner, 2022).

Despite ever-increasing high-profile privacy misconduct (for instance, revelations about Facebook's privacy practices by a former employee), users are left with few options to protect their data and privacy and to move to rival platforms due to the unbalanced playing field and high switching costs (Kranz et al., 2023). In addition, it is relevant to underscore how there is information asymmetry among platforms and users: in a modern digital market, it is impossible to reveal the full scope of data practices in a way that consumers can fully comprehend (Solove, 2012).

A report by the Ada Lovelace Institute (2020) warns of the significant concerns that the fast-growing collection and analysis of quantified data about health (for example), termed "datafication," can have. This practice *"makes individuals' health legible to a broad array of actors outside recognised medical and clinical settings, giving those with the appropriate digital tools an increased ability to know about, and engage with, people's health through their data. Datafication also creates increasingly comprehensive and quantified renderings of health, creating the conditions for disempowerment and providing unprecedented opportunities to monitor and influence people."*

These statements match with those expressed by the scholars Lanier (2010, 2018) and Zuboff (2015, 2019), who broaden the concept of "datafication" to all human activities and claim that it negatively affects society. The authors state that people's continuous and often unaware engagement with digital platforms - which appear to offer them free services – is instrumental to achieving the platforms' goals, which aim to manipulate

users' behaviors to benefit paying third parties. And yet, the data harvested by the platform can represent nonmonetary costs charged to users in exchange for the free services and products (Kira et al., 2021). Essentially, consumers pay for a product or service with their data (Malgieri & Custers, 2018).

Notably, Zuboff (2019) attacks such platforms, as *"they capture and monetise user generated data in ways that can generate huge profits, while end-users are not always aware of the role they play in a system that uses them and their behaviours as an input, in a business logic fuelled by strategies of data-extractive businesses."*

Another example of a likely privacy breach – which paves the way for an interesting discussion around how users' data may be shared between services – is the case of Facebook. The tech company merged the infrastructures of Facebook Messenger, WhatsApp, and Instagram after having promised years prior that it would not have done it. This decision might have harmed those who preferred to keep their use of each app and their personal data separate. Indeed, Germany's competition regulator responded to this announcement by prohibiting Facebook from combining data from different sources (such as WhatsApp or Instagram) with data from Facebook *"without a user's explicit and voluntary consent"* (Scott Morton et al., 2019). More in general, by merging various data sets, platforms can generate inferences that they can leverage in adjacent markets (Stucke & Grunes, 2016) and spread their power across the whole supply chain and ecosystem actors (Jacobides et al., 2019).

Scott Morton et al. (2019) present other devious practices used to extrapolate personal data: the so-called "dark patterns[6]". For instance, Google Maps repeatedly asks users whether a place they regularly return to should be labelled "home" or "work". If the user agrees to label the geolocation, then the pop-up queries will cease. Conversely, if he clicks on "not now" then, there will be more queries a few days later. As a result of this insistence, users may eventually provide personal information. However, this does not occur because they want to share it, but because they want to prevent further nagging.

As just mentioned, risks associated with privacy violations go beyond just data collection and embrace the theme of data inferences. On the one hand, more available data help to improve services and products, in turn leading to better user targeting and reduced costs

[6] This expression refers to *"user interfaces that make it difficult for users to express their actual preferences or manipulate users into taking actions that do not comport with their preferences or expectations"* (Forbrukerrådet, 2018).

(Turck, 2016). On the other hand, digital platforms can infer conclusions about people's habits by means of big data, algorithms, predictive analytics, models, and machine learning. These inferences are in turn used to manipulate and nudge individuals, often without their awareness and nearly always without any control or responsibility (Wachter & Mittelstadt, 2019). Consequently, information asymmetry increases (Scott Morton et al., 2019), as well as the likelihood of disclosing personal characteristics or preferences that consumers wish to conceal. Likewise, the risk of being exposed to a greater attack surface for digital malfeasance and discrimination surges (Kemp, 2020).

Digital platforms and their ecosystems onset led to a paradox, difficult to imagine at the beginning of the Internet's birth.

This disruption once promised to deliver a fairer world, bringing down old power structures, where distributed computing and communication networks provided equal access for all to digital information and economic opportunities (Benckler, 2006). On the contrary, platform dynamics have led to a concentration of economic and social activity in a small number of large and powerful companies (Gawer, 2020), difficult to control and regulate.

Although data protection and competition law originate from different social concerns and specific legal tenets and methodologies, the emergence of digital markets and the role played by data driving the business models of technology firms have brought these two fields closer together (Jacobides et al., 2020).

Nevertheless, there is no clear analytical framing yet of the relationship between data protection and competition law when it comes to digital ecosystems. The current compartmentalized approach means that potentially beneficial synergies are often disregarded. More concerning, applying competition law and data protection regulation separately can lead to distinct outcomes in several situations.

Gal & Aviv (2020) have identified some main market dynamics that may limit competition and increase market concentration.

First, the costs of organizing a dataset in a way that complies with the General Data Protection Regulation (GDPR) may be high; therefore, some small entrants might find it unprofitable to collect data. Second – and strictly related to the first issue - the GDPR prohibits or makes it more difficult to engage in some methods of data collection (for example, the need to receive a user's consent to use his data imposes transaction costs for

internal data collection), creating comparative advantages for some data controllers who can bear these obligations. Third, the GDPR reduces the economic incentives of firms to share any data collected. This is because those sharing data are still liable for monitoring its use by anyone the data are shared with. This, in turn, further reduces the number of data suppliers. Fourth, even when data are shared, their use may be limited. Notably, it is often costly, and sometimes impossible, to obtain informed consent from data subjects to have their data shared with the data receiver, as may be required by the GDPR. Fifth, the costs of noncompliance are high: fines that can be imposed on firms that fail to comply are significant (for an undertaking, up to 4% of the total worldwide annual turnover of the preceding financial year[7]). Moreover, the GDPR imposes a duty on the data receiver to ensure that any data received from an external entity is GDPR-compliant. Consequently, external noncompliant data shared and combined with the receiver's data would pollute the whole dataset. To avoid such issues, data receivers must engage in ongoing monitoring of their data suppliers' collection and processing practices. This, in turn, might further reduce incentives to use externally collected data and strengthen incentives for internal data collection. Sixth, the GDPR creates uncertainty. This may result in higher costs on smaller players and in wide interpretation of the regulation by large players, which may limit the sharing of their data. Finally, the GDPR, and especially the discussions surrounding it, could have an indirect effect on data subjects, who might be more willing to provide their data to larger, more reputable firms, or to firms they interact with.

To sum up, evidence shows how while limits to data collection and processing can enhance users' privacy, they can also benefit large firms over small- and medium-sized enterprises (SMEs) - which cannot access databases and process data efficiently to reduce costs and improve quality - leading to less competitive markets. An example is given by Google's move to prohibit third-party cookies in its web browser Chrome: by disabling the mechanism that publishers use to target ads and personalize content, Google will potentially entrench its position in the digital advertising business (Kira et al., 2021). And yet, the cost of complying with strict data protection laws can prevent companies from entering new markets (Furman et al., 2019). Conversely, bigger companies can more easily cover these costs (Kira et al., 2021).

[7] Article 83, GDPR.

Moreover, an interesting study by Li et al. (2023) has presented additional examples of GDPR's lack of effectiveness. By assessing its application under four dimensions, the analysis evaluates how well the GDPR fulfills its intended goals and what unintended consequences may have arisen. The first parameter – awareness and trust - explores public understanding, perceptions, and trust in the GDPR. While awareness levels have increased since its introduction, evidence suggests that this has not always translated into greater user confidence or behavioral change. Many users have not deep understanding of the regulation's key principles, and some express skepticism regarding its ability to protect personal data effectively. Among practitioners, sector-specific studies indicate varying levels of compliance and challenges due to limited resources or vague policy texts. Empirical studies of enforcement authorities and courts are relatively sparse, although fines and enforcement inconsistencies across member states have been noted. The second driver – operational performance - assesses whether the GDPR's tools, such as privacy policies, consent procedures, user interfaces, and data subject rights, achieve their goals. The literature reveals a mixed picture. While transparency in privacy policies has improved in form, their readability and accessibility remain limited. Consent mechanisms are often undermined by dark patterns and poor user interface design – issues showed above - raising concerns about meaningful consent. Although mechanisms for data subject rights exist, research suggests significant barriers to their exercise. The third dimension – ripple effect - refers to broader societal, economic, and regulatory impacts of the GDPR. Studies show that the regulation has influenced global privacy norms, prompting reforms in other jurisdictions. However, it has also been critiqued for potentially stifling innovation, particularly among SMEs, and for contributing to market concentration as large firms are better equipped to absorb compliance costs; these problems have also been presented in the aforementioned study of Gal & Aviv (2020). The fourth factor – normative clarity - evaluates whether GDPR provisions are conceptually and practically clear enough to guide implementation and compliance. Scholars and practitioners have reported ambiguities in key areas; consequently, this lack of clarity hampers consistent application and complicates enforcement. Considering the varied interpretations that are given, more detailed guidance and standardization are needed, especially taking into account the advantages gotten by larger firms when they exploit GDPR's grey zones, a situation presented by Gal & Aviv (2020), too.

In general, on the one hand, a key regulatory issue is how to incorporate privacy considerations into competition authorities' analysis to help them deliver their goals, regardless of the specific competition policy aims. On the other hand, it is important to consider the effects an "over-regulation" may have on digital markets and consumers.

2.3. EU regulatory framework

As previously mentioned, the largest digital players are among the most valuable corporations in the world. Notably, Big Tech firms exert massive influence in the digital economy, thanks to the significant power they gained over time.

A bit of evidence is useful to understand the scope of these digital ecosystems' operations. Google and Meta dominate two-thirds of digital advertising. Google controls about 90% of Internet search in most markets (except China) and about 80% of smartphone operating systems (OS) with the free Android OS. Apple has captured 90% of the world's profits in smartphones. Amazon presides over more than 40% of e-commerce in the United States and dominates e-books. Microsoft owns more than 90% of the world's personal computer (PC) operating systems. Meta accounts for approximately two-thirds of social media activity (Gawer, 2020).

As these digital entities continue to reshape economic and social structures, policymakers and regulatory bodies face the complex task of ensuring fair competition, protecting consumer rights, and fostering innovation without stifling growth. The issue of their dominance has grown so sufficiently that regulatory authorities are not only seeking to enforce existing laws but are seriously contemplating new regulatory frameworks in Europe and elsewhere (Gawer, 2020).

In this regard, the European Parliament enacted a fundamental legislative initiative aimed at regulating digital markets and the many actors' behavior: the Regulation (EU) 2022/1925, better known as the Digital Markets Act (DMA).

By introducing harmonized rules across member states, the DMA has the purpose of preventing the largest digital platforms from implementing unfair practices against business users and end users and of ensuring contestable markets in the digital sector. Notably, this regulation is addressed to the most dominant online platforms, identified as "gatekeepers," which are companies providing core platform services, including online

intermediation services, online search engines, online social networking services, video-sharing platform services, operating systems, web browsers, and some others.

DMA's starting point is the acknowledgement of a well-defined situation: in the digital economy, "these gatekeepers" have gained a huge and disproportionate influence over digital markets. Indeed, the regulation presents a list of characteristics – previously illustrated as well - such as extreme economies of scale, strong network effects, vertical integration, and control over vast amounts of data, proper to these platforms, which contribute to phenomena like user lock-in, lack of multihoming options, and reduced market contestability.

Gatekeepers under the DMA are designated on specific qualitative criteria - such as the platform's importance as a gateway between businesses and consumers, its significant impact on the internal market, and its entrenched and durable market position – and quantitative requirements – including turnover and user numbers in the European Union (EU). Once these criteria are met, platforms are obliged to notify the Commission and submit detailed information about their operations. However, despite the fulfillment of the quantitative benchmarks, an undertaking may contest its designation by demonstrating that the qualitative conditions are not met.

Nevertheless – when assessing a platform's market position - the Commission reserves the right to evaluate additional indicators. These include, among others, the existence of strong network effects, data-driven competitive advantages, economies of scale and scope, user lock-in mechanisms, and the extent of vertical or cross-service integration. Additionally, the Commission may take into account potential future developments, such as planned mergers or acquisitions, which could further consolidate the platform's market power.

The innovation of DMA is to bring in an ex-ante regulatory framework - imposing obligations and prohibitions on gatekeepers – designed to tackle practices hindering market access, distorting competition, or unfairly disadvantaging business users and consumers. For instance, the regulation proposes requirements for interoperability, data portability, transparency in advertising services, and prohibitions on self-preferencing and the use and combination of non-public data to compete against business users.

Gatekeepers are also prevented from favoring their own services in rankings, limiting user choice in default settings or app removal, and restricting businesses from dealing

with customers independently of the platform. The latter is a principle that reinforces user autonomy and commercial freedom and allows end users to access services through alternative distribution channels without facing technical or contractual barriers. Additionally, to ensure transparency and accountability, designated gatekeepers must regularly report on how they are complying with their obligations. Moreover, relevant to mention are the mechanisms that allow the European Commission for the adaptation of these rules in order to try to keep up with rapid technological and market developments.

In terms of enforcement, the European Commission plays a central role. It has the authority to monitor gatekeepers' compliance and carry out in-depth market investigations, even into new services and new practices not previously detected by this regulation. When necessary, the Commission can impose fines and – in cases of repeated non-compliance – enforce behavioral or structural remedies to restore fair market conditions.

As we can see, the Digital Markets Act marks a fundamental shift in the EU's approach to digital regulation. By addressing structural issues ex ante, it remarks on the need to maintain contestability and fairness, stifle the abuse of market power by digital gatekeepers, and promote a more open and competitive playing field across the European Union. In an increasingly complex and dynamic digital landscape, this regulation is not merely a competition tool but a policy instrument to shape the future of digital markets.

While the DMA primarily places emphasis on economic power and unfair practices in digital markets, it does not encompass all the regulatory challenges posed by online platforms. To complement this framework, the European Union introduced the Digital Services Act (DSA), formally known as Regulation (EU) 2022/2065, which focuses on the broader responsibilities of digital intermediaries in relation to user safety, transparency, and the dissemination of content. In this case, the emphasis is on the governance of digital services and the protection of fundamental rights in the online environment, without disregarding the focus on innovation.

Even though the term "gatekeeper" is not explicitly mentioned, this regulation applies to intermediary services offered to people who are established or located in the European Union, including platforms established outside the Union that reach users within its territory.

One of the underpinning principles of the DSA is the maintenance of liability exemptions for intermediaries, first established under the E-Commerce Directive 2000/31. These exemptions apply to service providers who act as passive conduits for information and thus merely transmit, temporarily store, or store information provided by a recipient of the service. Conversely, the accountability is present if they play an active role in the content creation or dissemination.

Contrary to what the audience may think, there are no obligations to monitor the information transmitted or stored by intermediaries, nor to seek facts or circumstances indicating illegal activity. However, these exemptions are balanced by specific obligations to ensure transparency, accountability, and responsiveness to illegal content.

In general, a framework for cross-border enforcement is established, and protocols are set out to handle several situations. In fact, once platforms receive orders to remove illegal content or disclose user data, they must act promptly and inform the authorities about their response. These processes emphasize cooperation and information sharing among digital platforms and public institutions.

To promote direct communication between providers, European authorities, and users, the regulation imposes the obligation (on the part of the providers) to designate two single points of contact, one for the authorities and one for recipients of the service, whereas if providers are not established in the European Union, they shall appoint a legal representative who is addressed on all issues. In this way, effective enforcement and legal accountability are ensured.

A major milestone of the DSA – like the DMA – is transparency. For instance, service providers are required to inform users – in a clear and easily accessible way - about the rules governing content moderation and the types of restrictions they may face. The principle is reinforced through mandatory reporting obligations, requiring platforms to publish annual reports on content moderation and the actions taken to enforce their terms of service.

Another feature of this legislation is the establishment of harmonized “notice and action” mechanisms to report illegal content. Hosting services are required to implement straightforward reporting procedures for users and handle complaints in an objective and accurate way, with a particular focus on communication and justification of any decisions to restrict access. It is important to underscore how this kind of notice shall be considered

to give rise to actual knowledge or awareness of the fact. Overall, these steps are intended to enhance consumer protection and prevent abuse.

Sometimes, suspicions of more serious crimes may be noticed. In case of the awareness, the provider of hosting services must act promptly and inform relevant authorities.

The level of accuracy shown throughout the DSA is extreme. This detail orientation is also demonstrated by the additional provisions for online platform providers regarding user rights and dispute resolution. For example, users must have access to complaint systems and alternative dispute settlement bodies that operate independently, like the Digital Services Coordinators. They are introduced in each member state and serve as the primary enforcement bodies. This mechanism represents a way to empower and safeguard people from online platforms' discretion in dispute handling.

DSA introduces an interesting topic of discussion: as mentioned in the previous paragraph, we often make unwitting decisions due to deceitful practices implemented by digital platforms. In this regard, some provisions forbid misleading interface design and manipulative techniques that impair user autonomy. Likewise, transparent and fair advertising is ensured.

A great emphasis is placed on online protection of minors, vulnerable figures in the digital environment, hence prompting major attention and security.

A key innovation of the DSA is the creation of a special category: very large online platforms and very large online search engines. These digital entities are subject to the most stringent rules, due to their significant reach and systematic importance. The requirements range from basic due diligence obligations to more intensive risk assessment and risk management measures and include crisis response protocols and the establishment of an independent audit that assesses compliance with DSA. Further obligations concern greater advertising transparency and providing data access to regulatory bodies – such as the Digital Service Coordinator of the establishment or the Commission - to facilitate supervision.

While Digital Services Coordinators monitor compliance and investigate breaches of smaller platforms, at the EU level, the European Commission holds direct supervisory authority over very large online platforms and very large online search engines and has broader powers in terms of oversight, investigation, enforcement, and monitoring.

Cooperation and communication between entities is fostered to address efforts efficiently across jurisdictions. In this sense, Digital Services Coordinators have the chance to launch joint investigations. In addition, beside them and the Commission, the DSA also introduces the European Board for Digital Services, an independent advisory body tasked with assisting both national and EU-level authorities in implementing the regulation effectively.

As emerged from the illustration, the Digital Services Act represents a comprehensive regulatory tool designed to foster a safe, fair, and open digital space in the EU. This legislation marks a significant step toward responsible digital governance, as it specifies responsibilities for digital intermediaries, reinforces user rights, and equips authorities with direct enforcement tools.

To integrate the European regulatory framework within which digital platforms have to navigate and which they have to comply with, it is essential to turn the attention to another pivotal piece of legislation that tries to keep up with the pace of rapid advancements in technology, namely, the Artificial Intelligence Act (AI Act, Regulation (EU) 2024/1689), which entered into force in August 2024.

The purpose of this regulation is to envisage a comprehensive framework for the development, deployment, and use of AI systems across the European Union and to ensure that AI technologies are not only innovative and instrumental to economic growth but also aligned with the EU's values, fundamental rights, and principles. In general, the focal point of this legislation is the belief that this new technology should be a tool for people, with the ultimate aim of benefiting our well-being.

This initiative stems from the Commission’s need to promote trustworthy, safe, and ethical AI and aims to give people and other users the confidence to embrace AI-based solutions while encouraging businesses to develop them. Moreover, the AI Act's origin shall also be sought in the necessity to provide the EU with a uniform approach against the potential fragmentation that could result from several national legislations. Such fragmentation may fail in safeguarding the EU’s fundamental rights and values and slow down market uptake of AI. This is why – according to the Commission’s standpoint – a unique regulatory framework may ensure a level playing field and protect all people, while strengthening Europe’s competitiveness and industrial basis in AI.

The proposal introduces a risk-based approach that categorizes AI systems based on the level of risk they pose to fundamental rights and safety. First, unacceptable risk systems - such as those involving manipulative subliminal techniques, vulnerabilities exploitation of specific groups like children or persons with disabilities, social scoring, and real-time remote biometric identification – are completely banned.

Second, high-risk AI systems are permitted but subject to strict requirements concerning data governance, documentation and traceability, transparency, human oversight, robustness, and cybersecurity. Third, low or minimal risk systems are only obliged to few transparency obligations.

Criteria for determining whether an AI system is high-risk are based on the function performed by the same but also on the specific purpose and modalities for which that system is used.

One of the remarkable features introduced is the obligation for high-risk AI providers to perform conformity assessments prior to market entry. This process includes compiling technical documentation, maintaining a quality and risk management system, and ensuring ongoing post-market monitoring. For AI systems that interact with humans, are used to detect emotions based on biometric data, and are capable of generating or manipulating content, there are some obligations to inform people thereof.

Other than this list of provisions, providers are required to inform authorities about any serious incidents, malfunctions, or fundamental rights breaches related to their systems, as well as any recalls or withdrawals of AI systems from the market. However, providers and users of high-risk AI systems are provided with supporting guidance and compliance tools to comply with the Act and minimize their costs. Indeed, the regulation applies both to those who provide and make use of the technology. Additionally, other participants across the AI value chain (for example, importers, distributors, and authorized representatives) are subject to some obligations.

To keep track of high-risk AI applications, the legislative act envisions the creation of a centralized public EU-wide database that allows competent authorities, users, and other interested people to verify if the high-risk AI system complies with the requirements laid down in the regulation.

On the other hand, the AI Act includes provisions to foster innovation, such as the creation of AI regulatory sandboxes: these are controlled environments established by national authorities that allow for the experimentation and testing of AI systems under oversight.
From a governance perspective, member states are required to appoint national supervisory authorities to implement and enforce the regulation, which are supervised by the European Data Protection Supervisor. At the same time, a new EU-level body, the European Artificial Intelligence Board, is established to ensure coherent application of the AI Act, coordinate national authorities, and provide advisory services to the Commission.
Alongside an ex-ante assessment, the regulation also includes detailed plans for post-market monitoring, incident reporting, and investigation, as well as provisions allowing public authorities to promptly intervene when needed.
Lastly, as we previously saw with the DSA and DMA, the Commission commits to regularly evaluating and updating the regulation based on technological progress and market developments.
After having illustrated a pivotal legislative initiative aiming at positioning the EU itself as a global leader in the regulation of artificial intelligence, it is the moment of presenting another fundamental pillar of the EU regulatory framework, useful to complete the landscape within which digital entities have to operate: the General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679).
As shown in the previous paragraph, data protection and privacy regulation have gained particular attention in debates around suitable frameworks to supervise digital platforms and their ecosystems.
In this regard, the GDPR has been designed to safeguard personal data and privacy for all individuals within the European Union and lay out a set of rules to regulate the free movement of personal data, with the ultimate scope of protecting fundamental rights and people's freedoms. Notably, this regulation emerged in response to growing concerns over how personal data is collected, used, and transferred throughout the digital space.
GDPR's extraterritorial scope extends to any entity - whether established in the EU or not - that processes personal data in connection with offering goods or services to EU citizens or monitoring their behavior. As shown here and in the previous regulations, this extraterritorial reach highlights the EU's intention to "digitally protect" its citizens.

The regulation is structured around several key principles and obligations. Central are the notions of lawfulness, fairness, and transparency in processing personal data. Indeed, data must be collected for specified, explicit, and legitimate purposes and should be limited to what is necessary, accurate, and stored only for as long as needed. And yet, it is well-known that not all information is the same; some of it is more sensitive than others and therefore needs to be treated accordingly. Stricter restrictions apply when it comes to sensitive data, such as health information, biometric identifiers, or data revealing political or religious beliefs. They can only be processed if the subject has given explicit consent, or it is necessary for specific purposes.

One of the most important sections of the GDPR relates to data subject rights. These include the rights to access personal data, rectify inaccurate data, erase data under certain conditions - commonly referred to as the "right to be forgotten" - and restrict or object to processing.

Once again, the theme of data portability is tackled: GDPR allows individuals to obtain and reuse their personal data across different services, without hindrance from the controller[8] to which the personal data have been provided.

As presented in the other legislative initiatives, transparency is a foundational concept. Organizations are required to inform users, in clear and accessible terms, about how their data is being processed, who it is shared with, and how long it will be retained. When consent is used as the basis for processing, it must be freely given and explicitly expressed. Users must also be able to withdraw consent at any time.

To ensure accountability, the GDPR imposes significant responsibilities on both controllers and processors[9]. Both parties are required to maintain records of processing activities, implement robust security measures, and ensure compliance through contractual arrangements. In the case of a data breach, authorities must be notified within a strict timeframe, and affected individuals must be informed when the breach poses a serious risk.

[8] According to Article 1 of GDPR, "controller" means *"the natural or legal person, public authority, agency or other body which, alone or jointly with others, determines the purposes and means of the processing of personal data; where the purposes and means of such processing are determined by Union or Member State law, the controller or the specific criteria for its nomination may be provided for by Union or Member State law."*

[9] According to Article 1 of GDPR, "processor" means *"a natural or legal person, public authority, agency or other body which processes personal data on behalf of the controller."*

An interesting novelty of this legal initiative is represented by the concept of "data protection by design and by default," which mandates that privacy considerations should be integrated into system architecture from the outset.

The GDPR also addresses the international dimension of data flows. It allows the transfer of personal data outside the EU only when adequate safeguards are adopted - such as when a third country has been recognized as providing an appropriate level of protection or when specific contractual mechanisms are implemented. These mechanisms' goal is to preserve the level of data protection guaranteed within the EU when data is exported abroad.

Similarly to the other regulations, the GDPR establishes independent national supervisory authorities responsible for monitoring compliance and enforcing law. Beside them, the European Data Protection Board is established to ensure consistent law interpretation and application across the EU.

To tackle potential disputes, the GDPR grants individuals the right to lodge complaints and seek judicial redress in cases of misuse or non-compliance and provides for substantial financial penalties for infringements.

In sum, this regulation sets a global benchmark for data privacy regulation. Its structure places data governance at the heart of the EU's digital and economic strategy. Nevertheless, an article of Politico (2025) describes how the complexity and accuracy spread throughout this regulation risks stifling competition and innovation in Europe – an issue explained in the previous paragraph as well – and, in addition, making businesses less competitive than rivals in the United States, China, and elsewhere.

In this regard, the European Commission plans to present a proposal to cut back the GDPR and, notably, provide greater support for SMEs in their compliance efforts. Conversely, this initiative may in turn trigger a lobbying war between Big Tech companies and privacy advocates, also considering the massive lobbying efforts borne by tech firms during the GDPR drafting process.

In conclusion, the four illustrated legislative measures – DMA, DSA, AI Act, and GDPR - contribute to a cohesive and solid regulatory landscape that tries to govern the complexities of digital ecosystems and the technologies that underpin them, despite several issues arising from the difficulty in balancing different interests. At the same time – by referring to Li et al. (2023) and extending their concept - it is fundamental to pay

attention to topics like the long-term systemic effects of these regulations and the reciprocal interactions between them. As emerged from GDPR's ambiguities, it is legit to wonder whether, over the next years, this European trend towards "over-regulation" may lead to further regulatory challenges, this time related to DMA, DSA, and the AI Act.

3. M&A IN THE DIGITAL MARKETS

3.1. The role of concentrations in the digital markets

As explored in the preceding chapter, digital platforms and ecosystems have come to occupy a central role in the contemporary economy, giving rise to unprecedented regulatory challenges. Other than those presented above, there is another critical area where these challenges manifest: the context of mergers and acquisitions (M&A).

In digital markets, concentrations play a significant role in shaping competitive dynamics and market structures. The description previously illustrated shows that, unlike traditional sectors, digital markets are often characterized by rapid innovation, dynamism, and strong network effects, making the impact of concentrations particularly complex and far-reaching.

This paragraph examines the strategic purpose of concentrations in the digital economy, analyzing how they are employed by dominant tech firms not only to expand their market presence but also to consolidate control over data, users, and technological infrastructures. At the same time, it is presented how, while M&A activity can be a driver of innovation and efficiency, it also raises concerns about entrenching market power, foreclosing competition, and weakening long-term innovation incentives, hence triggering authorities' interventions which – with many difficulties - try to keep up with tech corporations' extremely rapid pace and put a stop to their intense M&A operations.

Understanding the role of concentrations in the digital context is therefore essential for assessing their implications on competition and consumers.

First and foremost, to give an idea of tech companies' power, it is interesting to provide data regarding their M&A activity. A Federal Trade Commission (FTC) 2021 report found that in the period 2010-2019, the Big Tech firms solely carried out over 800 extraordinary operations, mostly involving small firms. As of the period 2020-2024, a study by SOMO (2025) reported nearly 150 M&A activities performed by Apple, Amazon, Microsoft, Alphabet, and Meta.

Nevertheless – as specified in the previous chapter – there are many other tech firms that exert broad dominance over their digital markets and strongly contribute to this hectic M&A activity. To give an idea, global tech M&A deal value reached $740.7 billion in 2024, a 46% increase from $506.4 billion in 2023, according to PitchBook (2025).

Furthermore, this deal value accounted for nearly 21% of all global M&A value, ranking second only to the business-to-business (B2B) sector.

This data is to state that – other than concentrations involving Big Tech companies – digital space hosts thousands of transactions carried out by thousands of tech firms, thus making it difficult to perform a thorough and deep analysis concerning the likely effects of a determined merger or acquisition. For example, some estimate that the US economy witnessed around 345,000 M&A transactions over the last two decades, ranging from small "acquihires"[10] to very large and complex multi-billion-dollar mergers that spanned the entire world (Statista, 2024).

Taking a quick step back to the number of acquisitions Big Tech firms performed from 2010 to 2019 (800), it is interesting to underscore an incredible datum: only one out of 800 operations was successfully challenged and stopped, namely, Meta's acquisition of Giphy in the UK. Moreover, in a study carried out by Robertson (2022) for the EC, she investigated nearly 100 national merger cases in digital and technology sectors and found that national competition authorities only rarely challenged these acquisitions. In fact, 76% of these mergers were unconditionally cleared in either phase 1 or 2, while only 6% of mergers were ultimately prohibited. As of the USA, the situation does not change. In fact, between 2001 and 2020, US antitrust authorities received 31,500 notifications for transactions above legally established thresholds (Billman & Salop, 2023). Out of these, only 970 transactions received a "closer look" by antitrust agencies, and about 300 were either abandoned or blocked by the same agencies. This means that two of the most sophisticated, well-resourced antitrust authorities in the world were only informed about the existence of 9.1% of the 345,000 M&A transactions that took place in the US over the past 20 years, scrutinized in detail 0.28% of cases, and blocked 0.09% of them (Lancieri & Valletti, 2024).

Robertson (2023) notes how jurisdictional limitations or insufficient legal theories of harm make it tough to tackle these extraordinary operations properly. In fact, given that most targets in these transactions are strategic small-scale start-ups generating minimal revenue, they frequently fall below the revenue thresholds established by EU merger control under the EU Merger Regulation (EUMR). This is because in the early stages of

[10] Commissioner Vestager (2024) defined them as situations where *"one company acquires another mainly for its talent"*.

their lives, such young companies mainly focus on rapid growth rather than maximizing their turnover or profit (Bourreau & de Streel, 2020). At the same time, at least in this early phase, the target company's significance for competition does not necessarily correlate with its turnover (Crémer et al., 2019).

As a result, many anti-competitive mergers escape scrutiny, particularly in the case of so-called "killer acquisitions." Furthermore, some authors hold that a "positive prior" exists in the assessment of conglomerate merger projects, which are usually not considered to raise competition concerns (van den Boom & Samranchit, 2022).

In response to these limitations, the Commission started heavily relying on Article 14 of the DMA, which imposes a novel obligation on designated digital gatekeepers to inform the EC of any intended mergers that involve core platform services, digital sector activities, or data collection, regardless of whether they meet traditional thresholds. This provision is expected to function as an early-warning mechanism, allowing the Commission to monitor the strategic behavior of dominant firms and intervene where necessary to preserve market contestability (Robertson, 2023).

Besides this remedy, Peristerakis et al. (2025) illustrate other initiatives put in action by the EC to address concentrations' issues in the digital markets over the last years.

First, the authority reinterpreted Article 22 of the EUMR - commonly known as the "Dutch clause" - to permit the referral of below-threshold transactions by member states that may not themselves have jurisdiction over a given merger. This means it became a strategic instrument for the Commission to assert jurisdiction over acquisitions that presented a substantive threat to competition but otherwise fell outside its remit. This reinterpretation was initially validated by the General Court. However, the Court of Justice of the European Union (CJEU) later overturned that decision in the *Illumina/GRAIL* case (2024), ruling that such referrals must have originated from national authorities that possessed legal competence to assess the transaction under their own laws. In lieu of the CJEU ruling, the Commission has adapted by collaborating more closely with member states that have introduced "call-in" powers enabling scrutiny of non-notifiable transactions. Furthermore, the Commission pushed for more member states to adopt below-threshold call-in powers.

Second, the Commission has broadened its interest beyond conventional merger structures to include partnerships in emerging technologies - particularly artificial

intelligence - including licensing agreements, asset acquisitions, and “acqui-hire” deals. Indeed, Commissioner Vestager (2024) acknowledged that while most of the AI partnerships are procompetitive, they could in some instances entrench market power in what is otherwise a fast-paced, emerging market. The underlying concern is that Big Tech firms and NVIDIA, which have strong positions at several layers of the AI value stack (such as cloud computing, access to data, and access to consumers), might foreclose competition through exclusivity, bundling, or tying in the markets in which these tech companies have significant market power (Peristerakis et al. 2025).

Third, the Commission searched for new theories of harm tailored to the structural realities of digital markets. Among these, the notion of “entrenchment” has gained prominence, whereby a transaction is scrutinized not for eliminating current competition but for reinforcing a dominant ecosystem’s position across complementary markets. The prohibition of the *Booking/eTraveli* acquisition – that will be better described in the next chapter - marked the first decision grounded in such reasoning. Similarly, the same authors (2025) note how recent cases such as *Adobe/Figma* and *Amazon/iRobot* demonstrate how regulatory concerns - particularly around vertical foreclosure, cross-market leverage, and access to user data - can lead companies to abandon their proposed extraordinary operations in anticipation of enforcement action. These examples show the Commission’s increasing reliance on qualitative evidence, such as internal business strategies and market expectations, rather than on traditional market share metrics.

In addition, in February 2024, the EC also adopted the new Market Definition Notice, which puts significant emphasis on non-price parameters for defining markets and discusses market definition in the context of multi-sided markets and digital ecosystems. The new Market Definition Notice provides transparency as to the approach the Commission will take; however, it leaves a wide margin of discretion for the Commission to define a single market or multiple markets in mergers involving multi-sided platforms or digital ecosystems, depending on the evidence that the Commission considers reliable, which, in many cases, is qualitative evidence (European Commission, 2024a).

This shift from a rigid, threshold-driven system to a more flexible and anticipatory model of oversight reflects an institutional learning process shaped by litigation outcomes, technological change, and policy experimentation. By expanding the range of transactions subject to scrutiny, developing more nuanced analytical tools, and aligning merger

control with broader digital regulation, the Commission aims at addressing the structural risks posed by consolidation in the digital economy and be less condescending towards thousands of concentrations occurring in digital markets.

Nevertheless, accurately applying all the aforementioned tools is challenging, not only because of the natural complexity of the endeavor but also because some industry players have strong incentives to lobby for more lenient interventions. Indeed, one of the most effective strategies to undermine the effectiveness of antitrust enforcers is simply to deprive them of the resources they need to operate efficiently (Lancieri et al., 2023). In this regard, Lancieri & Valletti (2024) examine how firms use political power to influence regulations in ways that protect or expand their market dominance. In addition, Cowgill et al. (2022) find out that, given the high numbers of M&A transactions occurring every year, this translates into billions of dollars in lobbying expenditures. Related to this, Lancieri et al. (2023) use a range of data sources to argue that the weakening of US antitrust enforcement over the past many decades happened under the significant influence of large business interests, which saw the strong enforcement of many laws as an impediment to their growth.

Moving on with the analysis, it is interesting to mention Germany and Austria's efforts to address the turnover threshold issue. The respective legislators have introduced the transaction value threshold in order to be able to identify competitively significant acquisitions of young companies. In this sense, the value of the transaction is intended to function as a suitable indicator of the competitive potential of a company that still generates low turnover. In contrast to the turnover-based threshold, the transaction value threshold does not depend on the target company achieving specific domestic revenues. Instead, this threshold requires that the target engage in substantial domestic activities, regardless of its current turnover (German Competition Authority, 2022). However, it is also noted that a high transaction value does not necessarily mean that a merger project raises competition concerns (Holmström et al., 2018). Furthermore, the practical application of the requirement that a company's domestic activity has to be substantial and the objective determination of the transaction value in the individual case are considered problematic (Levy et al., 2020).

Moreover, a paper written by the Working Group on Competition Law of the German Competition Authority (2022) presents another issue related to merger project assessment

in the digital economy: the uncertainty in forecasting the effects of the concentration on competition, considering it is an ex-ante tool. The forecast not only pertains to the development of the competitive situation in the event of the merger but also to a plausible "counterfactual" adequately taking into account the future development of the competitive situation without the merger.

Especially when the target company is still in an early stage of development and does not yet pose a significant competitive threat to the acquiring firm, or when horizontal overlaps exist only in markets where the acquirer has not yet established a strong position, it becomes particularly challenging to anticipate the potential competitive effects of the concentration (Argentesi et al., 2019a). In addition, several inherent characteristics of digital markets contribute to the difficulty of accurately predicting the competitive effects of a concentration. These include the presence of strong network effects, the multi-sided nature of many platform-based markets, and the centrality of data-driven business models. Furthermore, the high degree of dynamism - fueled by frequent and often disruptive innovations - further amplifies the uncertainty surrounding market evolution and competitive outcomes following a merger (Bourreau & de Streel, 2020).

Given the significant uncertainty often associated with predicting the effects of M&As in the digital sector, some scholars have suggested the value of complementing ex-ante merger control with the possibility of ex-post intervention. Allowing competition authorities to revisit and address a transaction after its completion is viewed in parts of the literature as a beneficial mechanism for managing unforeseen or evolving competitive harms. It is noted, for instance, that unlike ex-ante approaches, this method allows for a reduction in the number of operations requiring review, thereby mitigating the challenges associated with the uncertainty in forecasting likely effects. (Apel & Polley, 2021).

At the same time, however, the ex-post possibility to take up a case is met with considerable concern by another side of the literature. Notably, an authority's temporary power to divest companies following the transaction would result in considerable uncertainties for the parties involved. This may result, for instance, in a delay in the integration of the companies during the intervention period, preventing the realization of potential synergies or the implementation of other valuable strategic initiatives (Schallbruch et al., 2019).

Furthermore, it is pointed out that, with the concept of market structure abuse, the basis for an ex-post control already exists to a certain extent (Apel & Polley, 2021). However, according to the literature, such ex-post intervention is applicable only when the company in question already holds a dominant position. As a result, this approach does not extend to scenarios in which a firm is in the process of establishing dominance through the merger itself - cases that would require significant investigative effort from competition authorities. (Becker, 2020). Additionally, an ex-post intervention should consider that divestitures by authorities may involve practical and legal challenges (Immenga et al., 2020).

As has emerged so far, most of the M&As that occurred in digital markets over the last years was not assessed – and among those that have been assessed, only an irrelevant percentage was prohibited - under competition law due to the target companies' low turnover.

Nevertheless, the Working Group on Competition Law of the German Competition Authority (2022) observes that many of these deals involved target companies that had the potential to evolve into competitors of the acquiring firm (as in the case of *Facebook/Instagram*), contributed to reinforcing the acquirer's market position in a different market (such as *Google/DoubleClick*), or possessed data-driven business models that simultaneously enhanced the acquirer's position across multiple markets (e.g., *Google/YouTube*).

One of the main aspects of the debate around M&A in digital markets focuses on acquisitions of small, fast-growing start-ups by large tech corporations where the target company could be a potential competitor to the acquiring company, but at the time of the acquisition, notable horizontal overlaps are not yet evident. In this case, the merger is to be classified as a vertical or conglomerate one according to the traditional line of thinking, thereby limiting the applicable theories of harm to foreclosure and coordinated effects. This conventional approach can make it particularly challenging to demonstrate the presence of anticompetitive outcomes. (Crémer et al., 2019).

In this context, the phenomenon – become a regulatory challenge - of "killer acquisitions" emerges. It was first described by Cunningham et al. (2021) for the pharmaceutical industry and defined as acquisitions undertaken by the acquiring firm with the intention of eliminating the innovative products of the typically young target company from the

market or discontinuing the target's ongoing innovation efforts. The same authors (2021) also stated that this was not merely a neutral definition but a theory of harm.

In its September 2024 competition merger brief, the Commission defined killer acquisitions as transactions whereby *"a company acquires an innovative target solely to discontinue (kill) the target's product or its innovation projects with the aim of eliminating the direct competitive pressure that the target exerts on the acquiring company"* (European Commission, 2024b).

On the one hand, according to Argentesi et al. (2019a), the acquirer's incentive to discontinue the target company's innovative efforts after the takeover lies in avoiding rent cannibalization, which could result from the replacement of its previous products by the target company's innovative products (the so-called "replacement effect"). On the other hand, Crémer et al. (2019) argue that most tech acquisitions are not killer acquisitions since the target company's products or projects are integrated into the acquirer's ecosystem. In their opinion, this could result in efficiency gains, making it ever more complex to formulate a theory of harm.

The concept of killer acquisitions therefore has some nuances. The key point is that the acquiring firm may not aim at terminating the target company's innovative activities or remove its products from the market, but rather to bring them under its own control, thereby eliminating the competitive pressure that the target would have otherwise exerted (Pike, 2020).

In addition, acquiring innovative companies can also be linked to the acquirer's aim of reducing its own innovative efforts in the relevant target company's field of innovation; this is sometimes referred to as "reverse killer acquisition" (Caffarra et al., 2020). The Commission defined a reverse killer acquisition as the operation wherein *"the acquiring company decides to discontinue its own product or innovation projects post-closing"* (European Commission, 2024b).

Another reason behind these extraordinary operations lies in the expansion of a company ecosystem by adding another product or service (be it through internal or external growth). This may also form part of a broader strategy aimed at leveraging a strong position achieved in one market - often through network effects and economies of scale - into another market, with the intention of excluding competitors. This tactic is commonly referred to as "envelopment" (Mancini & Lapenta, 2020). As a result, overlaps in user

groups across the two markets may enable the company to directly benefit from strong network effects in the new market. Similarly, economies of scope such as the reuse of data collected in one market - can further enhance the firm's position in the adjacent market or even across the broader ecosystem. (Argentesi et al., 2019a).

The largest digital companies' use of these strategies to grow and expand may result in the fact that young, innovative companies no longer try to enter markets wherein big players dominate or no longer find any investors for this. This phenomenon is often referred to in the literature as the creation of a "kill zone" (Bourreau & De Streel, 2019), wherein the innovation incentives of start-ups and emerging firms may shift away from pursuing potentially disruptive innovations and instead focus on developing complementary technologies that align with the interests of dominant tech corporations. (German Competition Authority, 2022).

To integrate the landscape revolving around M&A in digital markets, it is relevant to mention three likely and general consequences, which are common in all types of M&A operations. Namely, price increase, output reduction, and consumer surplus reduction. Lancieri & Valletti (2024) support this view with economic models showing that, as market concentration increases - quantified by measures such as the Herfindahl-Hirschman Index (HHI) - firms gain greater ability to raise margins and extract a large share of surplus from consumers. This harm is exacerbated in already concentrated markets (for instance, digital markets dominated by large digital companies), where even small increases in market power can have great welfare losses.

To complete the framework presented so far, data considerations are essential, in lieu of their prominent role in today's digital economy.

On the one hand, increased data concentration through M&A exacerbates the net negative overlap of competition and data protection outcomes that have been outlined in the preceding chapter, hence rising regulatory concerns. In this regard, Kira et al. (2021) present Google's acquisition of Fitbit (a company that produces a smartwatch that digitally tracks health activity) as an example of a concentration raising concerns under this point of view. The EC argued that the processing of personal data by Google could have been used to deteriorate the quality of services and, consequently, competition in both the digital and health-care markets.

Notably, the EC's concerns revolved around three main likely issues. First, Google's access to Fitbit's user health and fitness data could have enhanced its ability to personalize ads, making it harder for competitors to compete. Second, Google could have restricted competitors' access to Fitbit's Web API, affecting companies that rely on Fitbit data, especially start-ups in the digital healthcare sector. Third, there was a concern that Google might have disadvantaged rival manufacturers of wrist-worn wearable devices by diminishing their interoperability with Android smartphones. In the end – despite these possible challenges – the transaction was approved, with a series of commitments on the part of Google to ensure that the above-mentioned points would have been addressed (European Commission, 2020).

By analyzing this case from Google's perspective, the acquisition of Fitbit can be interpreted not primarily as a means to undermine competition or exploit personal data, but rather as a strategic move to enhance its technological ecosystem and compete more effectively in the rapidly growing wearable and digital health markets. While the European Commission raised concerns about potential anti-competitive effects and privacy implications, Google may have positioned the transaction as one grounded in innovation, consumer benefit, and competition on the merits. Moreover, it is both plausible and legitimate to consider that, from the company's point of view, data integration was not intended to exclude rivals but rather to improve functionality, user experience, and personalization (consistent with user consent and the relevant data protection frameworks). Viewed through this lens, the Fitbit acquisition can be seen as a calculated step to enter a new market.

Extending beyond this specific case, many digital firms - from dominant global tech players to smaller ones – see M&A as a way to sustain growth, respond to technological change, and strengthen their competitive position in an environment marked by rapid evolution and network-driven dynamics. However, the strategic rationale behind such transactions does not deny the potential for harm. Indeed, as digital ecosystems expand and concentrations increase, it becomes crucial to rigorously assess the likely implications for market structure, innovation incentives, and consumer welfare.

As it has been explored so far, concentrations in digital markets can lead to the entrenchment of dominant positions, reduce competitive pressure, and create barriers for smaller players or new entrants. Moreover, when acquisitions involve control over vast

datasets or key functionalities, the risk of exclusionary practices and ecosystem foreclosure intensifies.

Therefore, while the strategic motivations of tech firms are relevant and often commercially justified, they must be weighed against the broader economic and societal consequences. Maintaining a balanced approach that recognizes both the legitimate business interests of acquiring firms, and the long-term health of digital markets is essential for ensuring that such transactions serve, rather than undermine, consumer and competitive interests.

3.2. EU competition law and the search for new theories of harm

3.2.1. Horizontal, vertical and conglomerate theories of harm

As introduced above, a crucial question in the assessment of digital M&A projects under competition law is whether anti-competitive effects potentially caused by a concentration are sufficiently covered by the established theories of harm. This section provides a mapping of the traditional theories of harm that have been most examined in recent years in evaluating extraordinary operations proposed by large digital companies.

The first type of M&A presented is the horizontal one, which involves M&As between direct competitors and has historically been the most concerning to competition regulators. Indeed, a horizontal merger can result in a significant impediment to effective competition by reducing the competitive pressure in markets where the parties to the merger previously used to compete with each other (German Competition Authority, 2022).

These operations eliminate direct competition from a rival offering a substitute product or service, thus removing a threat from the market that may be an existing or a potential future competitor (Competition and Markets Authority, 2021). By increasing the market power of the merged entity, this can give rise to anti-competitive unilateral effects resulting in price increases and/or impacts on other non-price parameters of competition, such as a reduction in quality (OECD, 2023). However, due to the dynamic nature of digital markets compared to traditional industries, horizontal theories of harm, in this context, more frequently focus on the elimination of potential competition or the anticompetitive implications of combining large datasets (OECD, 2023), as emerged from the previous considerations, too. Particularly in cases involving firms with overlapping

products, the main concern is whether the merged entity would be able to internalize switching customers that would otherwise sustain competitive pressure between the two firms. In such scenarios, competition authorities must evaluate whether sufficient alternative sources of competition will remain post-merger to prevent the emergence of anti-competitive effects (OECD, 2023).

In some cases, authorities have applied these standard horizontal frameworks in much the same way as in traditional markets, without needing to rely heavily on the special features of digital markets. Such circumstances have arisen where the competition authority determined that the overlap between the merging parties' offerings was either minimal or, if more substantial, did not pose a significant threat to competition due to the presence of numerous effective competitors in the market. A notable example is the European Commission's assessment of Microsoft's acquisition of Skype (European Commission, 2011). Although Skype was found to be in direct competition with Microsoft's Windows Live Messenger in the area of consumer communication services - such as instant messaging, voice, and video calls - the Commission concluded that the merger would not have significantly impeded competition. This conclusion was based on the relatively low or declining market shares of both parties and the continued existence of several strong competitors in the sector.

Nevertheless, there are cases where the competitive dynamics were less transparent; therefore, the characteristics of digital markets have been deeply evaluated to achieve a conclusion.

For instance, the EC looked at the influence of network effects in its assessment of the *Facebook/WhatsApp* acquisition in 2013 when analyzing the existing horizontal overlap between the parties' consumer communications apps. While noting that these services were characterized by strong network effects, the EC found this was offset by evidence of significant consumer multi-homing, low switching costs, and low barriers to entry and expansion. The EC also determined that the degree of differentiation between Facebook Messenger and WhatsApp, including the use of different user identifiers, meant that they were not close competitors. Similarly, the EC found that the parties were not close (actual or potential) competitors in social networking services. These conclusions, which in hindsight may have understated the competitive tension between the two offerings, demonstrate the challenge in assessing the closeness of existing competition in markets

that are emerging and/or rapidly developing (European Commission, 2013b). In this context, Crémer et al. (2019) cite the *Facebook/WhatsApp* case as an example illustrating that, when a transaction involves a broad ecosystem composed of differentiated services and only limited overlaps with the target firm, treating it as a standard horizontal merger may fail to capture the strategic motivations underlying the acquisition.

As far as network effects are concerned, Argentesi et al. (2019b) note how they can reinforce the competition problem caused by a horizontal merger. In fact, market entries and expansions may become difficult for competitors, and, from the customers' point of view, switching to other suppliers may be less attractive. Network effects can thus provide the parties to the merger with market power, which can be further strengthened by the transaction.

Moreover, considering the decisive role of data in competition in digital markets, the aggregation of competitively relevant data from both parties can generate significant economies of scale, potentially resulting in substantial competitive advantages. (German Competition Authority, 2022). For example, in its examination of the Microsoft/Yahoo transaction, the EC (2010) analyzed whether combining the parties' data and their user base on the market for online search engines (dominated by Google) would have made them more competitive.

In addition, the theme of potential competition loss shall be taken into account if, at the time of examination, the parties do not have significant horizontal overlaps. Potential competition can emerge when one of the merging parties has the capacity to enter the other's market, or where there are existing but limited horizontal overlaps that could become significant if one party turns into a meaningful competitor. Nonetheless, it remains crucial to evaluate whether a sufficient number of existing or prospective competitors are present to maintain adequate competitive pressure in the market (Argentesi et al., 2019b).

Furthermore, beyond horizontal theories of harm, merger assessments in digital markets also consider potential anticompetitive effects arising from vertical and conglomerate integrations.

Following the Guidelines on the assessment of Non-Horizontal Mergers under the Council Regulation on the control of concentrations between undertakings (2008), vertical mergers occur between companies operating at different levels of the supply

chain. The EC outlined specific concerns that may arise when such M&As give the combined firm both the ability and incentive to restrict access to key inputs or customers, thereby foreclosing rivals and distorting market dynamics. In particular, two main types of foreclosure are described. First, input foreclosure occurs when the merged entity restricts or degrades access to a critical upstream input for rival downstream firms. By raising the price or limiting the quality or availability of this input, the merged firm may weaken its competitors' ability to compete effectively. Second, customer foreclosure, which arises when the merged firm limits access to downstream markets for upstream rivals. For instance, by directing its own downstream demand toward its internal supply chain, the firm may reduce external demand for rival upstream firms, potentially forcing them to exit the market or scale back operations.

Despite these risks, according to the same guidelines, vertical mergers often bring efficiency gains. These include streamlined operations, better coordination, and improved information flow between upstream and downstream operations, as well as enhanced innovation and reduced transaction costs. As a consequence, the Commission acknowledges these potential benefits but requires that they be verifiable, merger-specific, and likely to benefit consumers.

Referring to digital markets, the German Competition Authority (2022) underlined how data represent a crucial factor for all tech companies. In this regard, sector-specific datasets collected by third parties, for example, can be an input factor for determined products or services that cannot (or not easily) be replaced, thus becoming fundamental for carrying the business on. Indeed, theories of harm concerning the foreclosure of the target company’s data representing an input factor have been examined by the EC in, for example, the *Google/Fitbit* (European Commission, 2020) and *Meta/Kustomer* (European Commission, 2022) cases.

Moving on to conglomerate mergers - and according to the Guidelines for Non-Horizontal Mergers (2008) - they involve firms that are in a relationship that is neither horizontal (as competitors in the same relevant market) nor vertical (as suppliers or customers). Namely, conglomerate mergers concern companies that are active in closely related markets (for instance, suppliers of complementary products or products that belong to the same product range).

These M&As raise fewer competition concerns on average, but they can still produce anti-competitive outcomes, particularly through strategies that allow a company to extend market power from one market to another. Indeed, the primary theory of harm in conglomerate mergers is that the merged firm may use its strong position in one market to foreclose competitors in another. For example, this can happen through bundling complementary products, making it harder for rivals to compete unless they can offer an equally broad portfolio. Furthermore, the firm can engage in tying, requiring consumers to purchase one product in order to gain access to another, or it may offer exclusionary rebates, loyalty discounts, or interoperability restrictions that undermine competitors' ability to gain or maintain market access.

Nevertheless - as seen for vertical mergers - conglomerate mergers often result in pro-competitive benefits, such as product innovation, increased consumer convenience, or cost savings.

Applied to digital markets, tying or bundling can also contribute to creating, strengthening, and securing digital ecosystems. In this case, market entries can be made more difficult by the fact that *"new competitors would have to enter several markets at the same time in order to be able to compete"* (OECD, 2020). Digital companies can achieve a tying effect by using preinstallations, for example, or by integrating a product or service into another product (Argentesi et al., 2019b). Possible foreclosure effects of such strategies were examined by the EC in the *Microsoft/LinkedIn* (European Commission, 2016) and *Microsoft/Skype* (European Commission, 2011) cases.

Another likely anti-competitive effect caused by conglomerate mergers concerns interoperability restriction (German Competition Authority, 2022). In such cases, the conditions under which third-party products interact with those of the merged entity may deteriorate relative to the pre-merger situation. Notably, interoperability restriction – that can also stem from vertical mergers – aims at foreclosing rivals by degrading either the supply of assets (information, interfaces, prototypes, etc.) or the technical support necessary to ensure interoperability with the merged entity's combined product offering (Beaudouin et al., 2022). This anti-competitive strategy was analyzed, for example, in the *Google/Fitbit* (European Commission, 2020) and *Meta/Kustomer* (European Commission, 2022) cases.

Additionally - once illustrated the most relevant features and the effects belonging to horizontal and non-horizontal theories of harm - both the guidelines enacted by the EC (2004, 2008) state that – to demonstrate the negative aspects stemming from such concentrations - it is fundamental to assess whether the acquiring company has the actual possibility and the incentive to engage in such practices as well as the likely impacts on competition and consumers.

3.2.2. Ecosystem theories of harm

After having presented the traditional theories of harm and their applications in the context of digital markets, it is now the moment to describe new theories of harm, deemed to be innovative and firstly applied in the *Booking/eTraveli* case of 2024: namely, the ecosystem theories of harm.

Some sources consider them as unique (Garces et al., 2024), while others state that they are merely new forms of the conglomerate theory of harm (Guersent, 2024). However, before illustrating these new theories of harm, it is important to define the differences between conglomerates and ecosystems.

Batra et al. (2024) note several elements of distinction. First, a conglomerate typically consists of fully owned subsidiaries, whereas an ecosystem may include both a network of independent providers and owned entities. Second, removing a company from a conglomerate may alter the overall risk profile, cost allocation, or profitability of the group, but it generally does not affect the core business identity of the conglomerate itself. In contrast, taking off a component from an ecosystem can have a serious impact on the orchestrating firm's business model. This is because ecosystem components often provide essential functionalities, capabilities, complementarities, or access to specific user groups, all of which contribute to the focal value proposition. Third, governance structures differ sharply between the two models. In conglomerates, ownership is centralized, but individual subsidiaries often maintain operational independence. Governance tends to focus on broad strategic oversight, such as risk management, cost efficiencies, or brand alignment. By contrast – as already explained in chapter 2 - ecosystems rely heavily on active governance even in the absence of common ownership. As such, governance in this context involves the coordination of network effects, complementarities, and knowledge sharing and encompasses decisions related to

openness, access, and pricing structures across the network, which revolves around the ecosystem's owner.

After this short digression, the analysis can now focus on the illustration of ecosystem theories of harm. Garces et al. (2024) defined them as *"concerns around the potential generation of a competitive advantage solely through the joint supply of distinct products whose production or distribution relies on some level of built-in technological integration provided by a digital platform."* The same authors note how this advantage may result from a non-meritorious increase in demand for one product within the ecosystem, driven by demand-side linkages with another product or service. Alternatively, it may stem from enhanced competitive positioning due to supply-side linkages, such as gains derived from access to data or technology associated with other products or services in the ecosystem.

However, it remains uncertain whether ecosystem theories of harm necessarily require the identification of a "core market" in which the ecosystem owner holds a dominant position or embrace the broader system comprising several markets.

Notably, at least one perspective suggests that the assessment of entrenchment should consider the extent to which a new product affects the ecosystem owner's ability to attract or retain users in its core business (Crémer et al., 2019).

Conversely, other standpoints refer to ecosystem linkages as potentially leading to the entrenchment of the ecosystem as a whole. Furthermore, other scholars suggest that a platform may leverage its ecosystem either to distort competition across all markets in which it operates or to target a particular market specifically (OECD, 2023).

In other words, concerns have been raised that acquiring a firm with complementary assets - and the resulting enhancement of the acquirer's network of capabilities - could strengthen the acquirer's competitive position, whether in existing markets or new ones, potentially harming rivals and ultimately affecting consumers (Nardini & Stenimachitis, 2024). In this sense, Batra et al. (2024) suggest that the likelihood of an impact on competition can be assessed using the capabilities of the acquirer and the target, which is higher when there is significant (potential) overlap of capabilities.

Given all these considerations, the EC has acknowledged that the expansion of an ecosystem into a new service may raise entry barriers by limiting competitors' and innovative entrants' access to the critical mass of users, data, or resources necessary to compete effectively with the extended platform (Crémer et al., 2019).

Despite their recent birth, these new theories of harm find their foundation in traditional theories of harm, with whom they share some key principles.

Nardini & Stenimachitis (2024) identify several common features underlying concerns in these cases. First, the possibility that a transaction could enhance a firm's ability and incentive to exclude competitors in other markets by gaining control over a critical input or functionality that rivals cannot replicate. Second, additional concerns include the potential leveraging of market power into related markets through practices such as tying or bundling. Third, the risk of entrenching an already strong position in a core market by acquiring complementary products or potential competitors, particularly those active in adjacent or emerging markets.

Nevertheless, the same authors (2024) highlight several uncertainties in these theories' enforcement, related to the novelty that characterizes them.

The first cause of uncertainty lies in the analytical framework that competition authorities apply. The central challenge in many cases is evaluating how the broader network of pre-existing assets and capabilities influences post-merger competitive dynamics, particularly when a firm seeks to acquire a new asset. In this regard, the fundamental distinction between vertical and conglomerate theories of harm is that they primarily examine the relationship between the merging parties' products or services. In contrast, ecosystem-based theories must consider the broader landscape of interconnected products and services - most of which exist before the deal and are not directly affected by it - with the final aim of anticipating how the post-merger network of capabilities could be leveraged across different markets. However, specifying that framework concretely and adequately is challenging because ecosystems differ, as do the specific interactions between the products, services, and parties involved.

A second source of uncertainty is about the consistency of final outcomes across jurisdictions, even if ecosystem theories of harm were to be evaluated using a standardized analytical framework. This issue is particularly significant for global transactions subject to parallel reviews by multiple competition authorities; this is because implementing remedies tailored to determined countries may be complex. The *Microsoft/Activision* case (European Commission, 2023a) - approved with remedies by the EC but initially blocked by the UK's Competition and Markets Authority based on the same underlying facts - is a clear example of this challenge. Whether this divergence

reflects a lack of clarity in the framework for assessing ecosystem theories of harm or points to a broader issue, it underscores the difficulty firms and legal entities face in predicting the likely outcome of such operations.

A third element of uncertainty concerns the scope of application for ecosystem theories of harm. While it may be assumed that such issues are primarily relevant to dominant digital players - such as Big Tech firms - there is increasing recognition that ecosystem theories of harm may find application to many other tech companies. The *Booking/eTraveli* case, for instance, illustrates that even firms outside the most observed tech giants may encounter ecosystem-based scrutiny if they possess strong core products or services and seek to acquire complementary assets.

The analytical approach and enforcement practices are developing, but this generates debates about when and how these theories will be applied and what outcomes they may produce. Moreover, it is relevant to mention other setbacks in the path to a straightforward theory's application.

Referring to the *Booking/eTraveli* case, the EC considered the position of Booking in the hotel OTA market and the position of eTraveli in the flight OTA market to not be replicable (European Commission, 2023b). This was crucial in the final decision ruling the acquisition was harmful for competition (Guersent, 2024). Nevertheless, Batra et al. (2024) contest this approach. In their opinion, other ecosystems - regardless of whether they operate directly in the flight or hotel OTA markets - could have still imposed a *"meaningful competitive constraint on the merged entity if they had competed at the broader ecosystem level."* This is to stress the importance of assessing mergers involving ecosystems from both the product market level and the broader ecosystem level. Indeed, even if a merger does not produce anti-competitive effects within individual product markets, it may still raise concerns by distorting competition at the ecosystem level and vice versa.

As emerged from the previous considerations, digital ecosystems undeniably introduce new dimensions and complexities to the economic assessment of mergers. Numerous questions regarding the interpretation and application of ecosystem theories of harm remain unresolved, creating significant uncertainty for firms and legal practitioners alike. In this regard, Nardini & Stenimachitis (2024) underscore the need for competition authorities to establish clear limiting principles to guide the application of these new

theories. In the absence of such principles, there is a risk that ecosystem theories of harm could devolve into broad structural presumptions, enabling authorities to challenge virtually any acquisition by tech firms with strong positions in their core markets, potentially impairing legitimate expansion and innovation.

4. A CASE STUDY: *BOOKING.COM/ETTRAVELI GROUP*

4.1. Case description

The broad discussion around tech companies orchestrating digital platforms and their increasingly intricate ecosystems - and the role of M&A in extending their influence within core and adjacent markets - now shifts focus to the *Booking/eTraveli Group* case, deemed to be a recent and illustrative example of how competition authorities are beginning to deal with the competitive implications of ecosystems expansion.[11]

As deeply analyzed before, digital markets evolve; thus, firms no longer operate in isolated core spaces but rather within interconnected constellations of products, services, functionalities, and user bases. This new paradigm has introduced new challenges for M&A assessment, particularly in identifying competitive harm that may arise not from direct market overlaps but from the strategic integration of complementary assets into a broader ecosystem.

The attempted acquisition of eTraveli Group (ETG) on the part of Booking offers an insightful lens through which to examine these dynamics. In this paragraph, the key facts of the case will first be summarized – according to what has been written in the EC's ruling - including the structure of the transaction, the services involved, and the concerns and inferences raised by the EC.

This examination follows a notification received by the EC pursuant to Article 4(5) of the EUMR; namely, it was the case of a concentration that did not have an EU dimension[12], but it was capable of being reviewed under the national competition laws of at least three member states. In this case, Austria, Cyprus, and Germany.

First and foremost, it is fundamental to present the parts involved in such a transaction.

On the one hand, Booking is a publicly listed company incorporated in the USA, which manages online travel agency (OTA) brands such as Booking.com, Rentalcars, Priceline, and Agoda. In the European Economic Area (EEA), Booking is mainly active in the provision of accommodation OTA services under the Booking.com brand, but it also operates in the provision of metasearch services (MSSs) for accommodation, car rental, and flights via its KAYAK business (which includes the brands KAYAK, Momondo,

[11] European Commission (2023b), 25 September 2023, Case M.10615, *Booking/eTraveli.*

[12] This because - according to the EUMR – eTraveli Group's aggregate EU-wide turnover did not reach €250 million, nor eTraveliGroup achieved a turnover of more than €25 million in at least three member states.

Cheapflights, and HotelsCombined, among others). Moreover, Booking provides access to its OTA accommodation functionalities, via commercial affiliated agreements, to certain rival OTAs that do not have the capability to offer such services.

On the other hand, Flugo (legal name of eTraveli Group, which is the trading name) is a Swedish company, primarily active as a flight OTA, that operates brands like Gotogate, My Trip, Seat24, and SuperSaver. It also has a flight MSS business operated under the Flygresor brand, but it fell outside the scope of the deal.

As just mentioned, both actors are OTAs; hence, it is important to provide clear-cut definitions of who they are.

According to the EC, *"OTA service providers are online retailers that sell one or more types of travel services (among others, flights, accommodation, and car rentals) supplied by travel service providers (TSPs) such as airlines, accommodation, and rental car companies. On the one hand, OTAs provide search, compare, and booking services to consumers, and on the other hand, marketing services and booking functionalities to TSPs."*[13] As such, OTAs act as intermediaries between TSPs and end-customers and enable TSPs to reach out to a high number of people, compared to what TSPs could achieve on their own.

Furthermore, this relationship is also facilitated by global distribution systems (GDS) and bed banks, which allow TSPs to connect with OTAs in order to improve the flow of information and content (for example, information on availability and pricing and booking services).

As regards MSSs, they aggregate information in relation to one or more types of travel services. Primarily, MSS allow customers to compare offers for the same travel product made by a TSP and/or by one or more OTAs; afterwards, they redirect them to OTA or TSP's platforms, thereby increasing the likelihood of future bookings and sales.

TSPs provide OTAs with the service they sell and pay a commission to the OTAs. For instance, in the case of Booking, the services provided to end customers are free of charge because TSPs pay a commission when a sale is made (typically 10-20% of the total purchase price). Furthermore, the contractual liability toward the end customer typically remains with TSPs, since Booking does not own the inventory offered through its platform.

[13] European Commission (2023b), 25 September 2023, Case M.10615, *Booking/eTraveli,* para. 51.

The success of various OTAs can be assessed by analyzing web traffic and conversion rates. For example, in January 2022, Booking attracted approximately 5 to 10 million unique visitors in France for its accommodation OTA services, compared to about 50,000 to 100,000 unique visitors for its flight OTA services. In contrast, ETG visitors for its accommodation OTA services were roughly 500 to 1,000, but had a stronger presence in flight bookings, where data reported around 450,000 to 550,000 unique visitors during the same period.

However, to have an actual idea of these platforms' power, it is relevant to consider the proportion of website visitors who proceed to make a booking; namely, the conversion rate. At the EEA level in 2022, Booking reported conversion rates ranging between 0% and 5% for accommodation and flights, 5% and 10% for car rentals and taxis, and 0% and 5% for attraction bookings. By comparison, ETG's conversion rates were between 0% and 5% for both flights and car rentals.

Once given a general overview about OTAs' operations, the EC continued the analysis by defining the relevant markets at the EEA level on which the assessment would have been based.

First, it concluded that OTA services represented a distinct market from direct bookings, as users on OTAs can compare various TSPs in one place. Second, within OTA services, the EC identified some sub-segments, particularly separating hotel OTA services from flight OTA services - considering the significant differences in demand-side and supply-side characteristics - deemed to be the two relevant product markets. Third, it is interesting to highlight the distinction made within the broad accommodation OTA market. Indeed, the EC stated that hotel OTA services and private accommodation OTA services (for example, Airbnb) belonged to separate markets, even though Booking argued the contrary, mainly because of the perceived consumers' interchangeability between the two types of accommodation services. Fourth, the EC addressed the differences between MSSs and OTAs. The former are found to constitute a separate market, as their function differs significantly from that of the latter.

Shifting focus to OTA market shares at the EEA level in 2022, accommodation OTA (including hotel OTA) was the largest OTA market and accounted for approximately 70-80% of the total transaction value (TTV) for all travel services, while flights OTA accounted for only 10-20%, and car rental OTA for 0-5%.

In general, the EC estimated over €100 billion in transactions generated annually by OTAs. More in-depth, as of 2022, the hotel OTA market in the EEA was extremely concentrated. Based on the results of the Commission's market reconstruction, there were two main suppliers of OTA services to hotels, namely Booking and Expedia. The former appeared to be the undisputed leading supplier (with a market share of approximately 60-70%), while the latter had a market share of approximately 10-20%.

The EC underscored how the hotel OTA market is characterized by strong network effects, which act as important barriers to entry and expansion: *"The greater the number of end customers an OTA has, the more attractive it is for hotels to be listed on that OTA, and the better content (rates) the hotel would be willing to provide to the OTA. Likewise, the greater the number of hotels listed on an OTA and the better the rates, the more attractive such OTA is for end consumers."*[14]

Larger OTAs, by leveraging their substantial consumer base, not only attract more hotels but also demand higher commissions. New entrants and smaller OTAs struggle to overcome this interdependency, as they are often unable to reach a critical mass of hotels and customers required to generate network effects that would challenge established players. This effect is further reinforced by low levels of multi-homing.

The evidence gathered during the Commission's investigation emphasized that hotels often view larger OTAs as more attractive partners because of their ability to drive demand through traffic, marketing, and commissions. Furthermore, the dominant OTAs benefit significantly from their marketing investments and paid advertising, which smaller players are not able to match in scale or efficacy. This had far-reaching implications for market structure, as it limited the opportunities for smaller hotel OTAs to build a position in such a concentrated space.

As regards the flight market in the EEA, the EC acknowledged it was notably smaller in terms of TTV compared to the hotel OTA market. This discrepancy was largely due to the much lower commission levels, typically below 5% of TTV. As a result, the flight OTA space functioned predominantly as a volume-based market, where success is based on the ability to facilitate a high number of transactions. To achieve this, flight OTAs are heavily dependent on MSSs for customer acquisition, using them as a crucial intermediary channel to reach many people. This reliance was exemplified by data from

[14] Ibid., para. 218.

2021, which showed that between 80% and 90% of ETG's transactions were generated through MSSs. As flight OTAs attract significant traffic through MSSs - which they pay on a cost-per-click or cost-per-acquisition basis - they seemed to be less reliant on online advertisement than hotel OTAs. In addition, despite being structurally similar to hotel OTAs, the barriers to entry in the flight OTA segment appeared relatively lower.

Nonetheless, even though market entry may have been procedurally simple, sustainability and competitiveness were more difficult to achieve due to low flight-only business margins. This is why flight OTAs often expand their service offerings by incorporating accommodation products for cross-selling purposes. However, the EC pointed out how creating a state-of-the-art flight OTA platform - such as ETG, which was particularly important to provide very competitive prices and offerings in this market – required significant investments in technology and time. Namely, these efforts would have been difficult to replicate for another competitor in the flight OTA segment.

Within the EEA, the market was fragmented, with eDreams leading at a 20-30% share, closely followed by ETG and Trip.com, both with 10-20% shares. ETG stood out particularly in terms of its pricing competitiveness, a parameter deemed essential by market participants.

After these considerations around hotel and flight OTAs' segments' general characteristics and market shares, the EC focused on the analysis of Booking's power. According to the EC, Booking held a dominant position in the hotel OTA market in the EEA. In its assessment, the EC considered Booking's market share both in the B2B market (hotels) and the B2C market (end customers). In both sectors, this giant held a market share of 60-70%.

This broad power was due to a combination of mutually reinforcing factors, briefly mentioned above.

The first one was Booking's exceptional scale of advertising investment, compared to its rivals. This spending power not only allowed Booking to consistently outperform competitors in key digital channels such as Google Ads but also led to massive returns, which turned out to be an operational advantage. Indeed, evidence from market participants, including competing OTAs and hotel partners, showed that Booking was widely perceived as the strongest player in Google Ads, able to dominate due to a marketing budget unrivaled in the travel industry. As a result, hotels that tried to be visible

online were almost forced to partner with Booking, since no other OTA offered comparable benefits. Indeed, despite higher commission rates than some of its competitors, hotels still chose to work with Booking due to its reach, conversion performance, and marketing capabilities.

In addition, alongside advertising, the Commission identified Booking's access to and use of customer data as another pillar of its dominance. Both OTAs and hotels rated Booking as the top provider of added-value data services, which deliver useful insights about consumers to hotel partners. This data-driven service stems from a large customer base and not only offers analytical tools and improves Booking's offering to hotels but also strengthens its lock-in effect, making hotels more reliant on its platform.

Third, network effects further reinforced Booking's dominance: they fostered growth over the past decade and made the gap between Booking and its competitors - most notably Expedia – broader.

This structure created high barriers to entry, as new OTAs must overcome not only Booking's strength as a brand but also the financial obstacle of competing in advertising and acquiring inventory from hotel suppliers. In this regard, market research highlighted the absence of new entrants, pointing to Booking's position as a significant deterrent. Several stakeholders expressed that launching a successful new OTA capable of competing with Booking was virtually impossible due to the dominant player's advantages expressed above.

Fourth, Booking had many users who repeatedly booked through its platform, thanks to its hotel portfolio, which is the largest among its competitors. This contributed to steady traffic levels and strong conversion rates, which in turn reinforced its appeal to hotels seeking visibility and bookings. In this way, network effects were triggered: more customers attract more hotels, and more hotels attract more customers.

In addition, survey data revealed that a significant share of users begin and end their accommodation search with Booking, rarely comparing other OTAs. This behavior suggested discrete levels of multi-homing, and - although Booking contested these interpretations, arguing that customers are multi-homing and do not always purchase multiple services from a single OTA - the Commission found substantial evidence that most users do not systematically compare offerings or switch providers.

Together, these elements created a market environment where effective competition was significantly hindered, and Booking's position became extremely difficult to challenge.

As for the strategic thinking behind this M&A operation, the EC found out some interesting motivations driving Booking's intention to acquire ETG.

In fact, according to Booking's internal documents and the Commission's assessment, evidence suggested that the company was facing a clear stagnation in the growth of its core hotel OTA business. Notably, while Booking experienced a fast-paced growth in the broader accommodation market between 2010 and 2019, the analysis acknowledged that this trend had slowed down, even before the COVID-19 pandemic.

In general, the hotel OTA market was increasingly seen as mature, and Booking's own growth rate was flattening. This downturn was reflected in both a decrease in customer growth and stagnation in average transaction values. Indeed, although Booking continued to attract a broad customer base, a large share of its revenues came from a relatively small group of high-value customers (HVCs), who represented only 20-30% of its global users but generated approximately 70-80% of total revenues. Mainly relying on a relatively small customer segment raised the need to explore new avenues of growth and reinforce loyalty among its most profitable users.

In response to this stagnation, Booking launched the Connected Trip strategy, *"a comprehensive travel ecosystem that would [have] allow[ed] customers the possibility of booking multiple travel services on the Booking platform."*[15] As such, it was a long-term initiative aimed at boosting growth by expanding beyond traditional hotel services, and, in this regard, the integration of other travel verticals, particularly flights, was seen as essential to this strategy.

Internally, Booking acknowledged that building a comprehensive travel ecosystem was crucial not only to attract new customers but also to strengthen engagement through cross-selling and loyalty mechanisms. As an example, Booking's loyalty programs, such as the Genius initiative, were being adapted to further engage with HVCs through personalized offers tied to purchases of several services. In other words, Booking recognized diversification and deeper user engagement were two crucial factors to maintain its leading position in the OTA market.

[15] Ibid., para. 572.

In addition, according to Booking's internal documents, flights were identified as the most common entry point in a customer's travel journey and represented the most critical tool to cross-sell accommodation. In addition, market feedback confirmed that consumers typically book flights before accommodations and that the nature of flights - as more price-sensitive, time-sensitive, and limited in availability - makes them the starting point for travel planning. Consequently, by capturing users at this early stage, Booking could have redirected them efficiently for hotel bookings, enhancing its ability to cross-sell accommodation services alongside optimizing profit margins through integrated offerings. This view was also supported by Booking's data: they reported that many new flight customers (of its existing flight OTA) also proceeded to book accommodations.

Moreover, the EC noted that the integration of a proprietary flight offering, facilitated by the acquisition of ETG, could have enabled Booking to gain access to valuable consumer data, instrumental for more personalized and effective marketing. Some respondents to the market investigation were concerned that, even without explicit bundling, Booking's control over customer data through flights could have further entrenched its dominance in the hotel OTA market. Logical consequences would have been greater user lock-in and higher barriers to entry for new competitors. Likewise, existing competitors would have faced significant challenges in replicating this model. The market investigation revealed that other OTAs did not have the same degree of vertical integration, nor the scale and brand recognition Booking possesses. Moreover, very few platforms were able and likely to develop a full Connected Trip ecosystem. As a consequence, other players would have likely been pushed to the margins of the hotel OTA market.

Furthermore, the EC underscored another benefit of the Connected Trip strategy: the reduction in cancellation rates. This effect was linked to the bundling of different travel components within a single reservation. As flights tend to be less flexible in terms of changes or cancellations compared to hotel bookings, when customers book multiple travel services together - including flights - they are more committed to their travel plans overall. As a result, they are less likely to cancel the accommodation portion of their booking.

Finally, internal forecasts by Booking projected that the Connected Trip strategy would have driven significant incremental accommodation sales in the coming years. In this

light, the Commission concluded that the core rationale of the transaction was to entrench Booking's position in the hotel OTA segment.

At the same time, the EC focused on counterfactuals of what would have likely happened in the absence of the transaction between Booking and ETG. Central to the analysis was the Commission's rejection of Booking's proposed counterfactual scenario - namely, the continued application of the existing commercial agreement between Booking and ETG – deemed to be farfetched. The Commission argued instead that without the deal, ETG would have had strong incentives to renegotiate that agreement under more favorable conditions for itself, likely leading to increased costs for Booking. This was due to the possible cannibalization of ETG's own flight sales by Booking's growth in that segment in the following years, a consequence that ETG would have had reasons to avoid.

Although Booking argued that the agreement would have remained profitable for ETG in absolute terms, the Commission stressed that ETG's acceptance of such terms stemmed from the broader context of the transaction and the strategic benefits coming from vertical integration.

To summarize, from the EC's perspective, in a counterfactual world without the acquisition, ETG would have had strong incentives to renegotiate the agreement to protect its own market position and profitability. While Booking contested this interpretation by stating that ETG's fee would have remained low and that cannibalization was minimal, the EC repeated that the conditions of the current contract reduced ETG's gains and increased Booking's growth at ETG's expense.

As for the alternative scenario of Booking developing its own flight OTA platform, the EC did not find this to be realistic.

From the internal documents, Booking confirmed the preference for independence from third parties; however, building a proprietary solution was described as costly, complex, and time-consuming. In addition, multiple OTAs and internal Booking sources described the technological difficulty of replicating ETG's established infrastructure. The Commission supported this view, and Booking itself had previously abandoned internal projects in favor of acquiring ETG due to these challenges.

Consequently, the Commission concluded that the most likely scenario without the deal was the renegotiation of the commercial agreement that would have led to less favorable conditions for Booking or a complete end in cooperation, which would have substantially

hindered Booking's growth plans in the flight OTA market. This justified the EC's view that the M&A operation was likely to change market dynamics significantly in Booking's favor, allowing it to expand its hotel OTA business.

Lastly, the EC assessed the likely efficiencies stemming from the proposed acquisition. According to the above-presented Merger Guidelines, efficiencies can be taken into account in the competition assessment if they counterbalance the potential negative effects of an extraordinary operation, particularly in terms of harm to consumers. Such efficiencies must be verifiable, merger-specific, substantial, and timely, and they must ultimately benefit consumers. This is particularly relevant in non-horizontal mergers, where efficiencies may arise through mechanisms like the internalization of double markups or the Cournot effect, which suggest that the merged entity might lower final prices.

In this regard, Booking presented two main efficiency arguments.

The first one stated that the supplier fees Booking paid to ETG for each flight transaction would have been eliminated post-merger, leading to what was described as the elimination of double marginalization efficiencies. The company projected cost savings would have translated into lower prices for consumers. However, Booking acknowledged that not all the efficiency gains would be passed on to consumers and admitted that the benefits may not have been fully realized in the market.

The EC found this argument unsubstantiated. It pointed out that the efficiencies cited by Booking were circumscribed to the flight OTA market, whereas the focus was on the hotel OTA market. As such, even if there were efficiencies in the flight segment, these would not have directly addressed the harm identified in the relevant market.

Moreover, the EC also noted that Booking had not presented concrete evidence showing that the savings would have benefited consumers. Indeed, by reviewing Booking's internal models, no clear plan or commitment to implement consumer price reductions post-acquisition was found. In addition, the estimated benefit per flight transaction was minimal and did not offset the anticipated harm to hotels – who had to pay higher commissions – and to other OTAs. Booking's internal documents confirmed that flight price discounts of the projected size would have likely been insignificant from the perspective of consumer behavior and thus unlikely to heavily alter customer decisions.

The second argument concerned a counterfactual scenario, wherein even if no flights were sold as a result of the acquisition, Booking would have still had an incentive to discount flights to attract more customers who would have then booked hotel accommodations through its platform. This scenario relied on the elasticity of demand for ETG's services and the historical ratio of flight bookings leading to hotel reservations. Additionally, Booking asserted that competitors may have also followed lower pricing strategies, thereby enhancing consumer benefits.

Nevertheless, the EC rejected this line of reasoning as well, reiterating that efficiencies must be related to the conduct of the merged entity, not its rivals. Furthermore, it was noted again that the alleged benefits remained insignificant and insufficient to outweigh the acquisition's competitive drawbacks in the hotel OTA sector. And yet, considering the negligible level of the alleged discounts, it was not obvious that competitors would have reacted at all.

The efficiencies proposed by Booking did not meet the required standards of substantiation and relevance, and the benefits were neither adequately demonstrated nor sufficient to offset the potential harm to competition.

Once again, Booking's claims were not accepted and, summed up with all the aforementioned considerations, led to the following conclusions.

First, the deal was likely to negatively impact hotels. Post-transaction, Booking's stronger market position would have allegedly reduced its incentive to lower commissions or offer better terms to hotels, and hotels would have faced higher costs due to the shift in demand for hotel rooms to Booking, which was already one of the most expensive sales channels.

Second, customers would have been negatively affected. Booking's strong brand loyalty and customer inertia were expected to grow even more after the M&A operation, which would have likely led to increased prices for end users.

Third, the transaction would have significantly impeded effective competition in the EEA. Booking would have gained a key customer acquisition channel and used it to expand an ecosystem of services that would have reinforced its market power. The deal would have also raised barriers to entry - harmful for competitors' expansion - and confirmed Booking's dominant position in the hotel OTA market.

As a result, the proposed M&A operation was prohibited.

4.2. Testing the ecosystem theories of harm in *Booking.com/eTtraveli* case

Once given an overview of the case, the analysis now focuses on how ecosystem theories of harm were applied in the Commission's assessment and the criticism related to such an application.

The nature of the EC's concern relating to the growth of Booking's ecosystem appears novel and to represent a clear shift from more traditional theories of harm. The question is the extent to which the elements considered in this assessment take inspiration from the assessment of the traditional theories of harm articulated in the EU's Merger Guidelines, or whether they constitute new conditions for competitive harm. And yet, another fundamental point is whether the EC's reasoning and decision considered all the relevant elements to achieve a conclusion; likewise, other doubts concern the right assessment of the trade-off between competition safeguard and a legitimate company's expansion ambitions.

In ecosystem theories of harm application, Garces et al. (2024) observe that the *Booking/eTraveli* case is an example of how, in M&A activities involving digital ecosystems, the EC evaluates demand-side linkages and, in particular, the significance of the acquired product/service as a source of new customers for other products or services provided by the acquirer.

In this decision, the proposed theory of harm is based on the allegedly strong tendency of users of the acquired service (flight OTAs) to also purchase the acquirer's core service (hotel OTAs), which would likely reinforce Booking's dominant position in the hotel OTA market. The incentives created by the spillover of demand between two products owned by the same firm are the basis for the traditional theories of harm as well.

In the *Booking/eTraveli* case, it was believed that cross-selling opportunities, combined with customer inertia, would have led many users of ETG for flight bookings to remain on the Booking platform when choosing a hotel OTA.

In addition to demand-side linkages, the same authors (2024) note that, in its judgement, the EC also considered potential competitive harm from supply-side linkages, typically data-based linkages. This involves assessing whether data or other assets from one product can be used to enhance another, potentially giving the latter a distinct competitive advantage. Applied to the case, the EC stated that Booking could have gained access to valuable consumer data, useful for more personalized and effective marketing. As a result,

this growing control over insightful data might have reinforced its dominant position in the hotel OTA market. Notably – according to Garces et al. (2024) - this theory of harm seems to stem from the idea that an advantage arising from superior capabilities could distort competition.

More importantly, what was the legal framework the Commission applied to assess this case?

First and foremost, the EC recalled Article 2 of the EUMR, which enables the European authority to appraise whether concentrations are compatible with the internal market or not. Notably, the EC had to assess whether the proposed acquisition would have significantly impaired effective competition, *"in particular as a result of the creation or strengthening of a dominant position in the internal market or a substantial part of it."*[16]

Second, the EC made various references to the previously presented Guidelines for Horizontal and Non-Horizontal Mergers.

Therefore - according to the Guidelines for Horizontal Mergers (2004) - the creation or strengthening of a dominant position held by a single firm as a result of a merger has been the most common basis for finding that an M&A deal would result in a significant hurdle to effective competition[17]. Specifically, the Guidelines highlight that certain M&A operations, if approved, could substantially hinder effective competition by placing the merged entity in a position where it possesses both the ability and incentive to impair the growth of smaller firms and limit the competitive opportunities available to rival companies[18].

In a similar way, the EC underscored that the Guidelines for Non-Horizontal Mergers (2008) indicate that *"a non-horizontal merger may significantly impede effective competition (particularly as a result of the creation or strengthening of a dominant position) by changing the ability and incentive to compete on the part of the merging companies and their competitors in ways that cause harm to consumers."*[19]

Both the Guidelines for Horizontal and Non-Horizontal Mergers recognize that a significant impediment to competition may result from the creation or reinforcement of a

[16] Horizontal Merger Guidelines (2004), para. 1.
[17] Ibid., para. 3.
[18] Ibid., para. 36.
[19] Ibid., para. 15.

dominant position, particularly when a structural change in the market reduces competitors' ability to enter, expand, or compete effectively[20].

In this specific case – according to what has been written in the ruling - EC was concerned that the deal would have allowed Booking to acquire a channel for attracting customers, which, in turn, would have enabled the same player to gain a significant amount of additional traffic for its hotel OTA offering and largely increase its sales.

In addition, by expanding its flight offering to its existing portfolio of OTA services, Booking would have expanded its ecosystem of OTA services. In this way - even though the transaction related to the acquisition of an operator active in a different market (the flight OTA market) - the operation would have made entry or expansion by rivals in the hotel OTA market more costly and reduced competitive pressures on Booking. Consequently, Booking's dominant position would have been reinforced, enabling it to increase costs for its customers (both the hotels and end customers).

These EC's arguments were contested by the parties, which argued that the relationship between their activities was neither horizontal nor vertical but complementary. Therefore, the principles for the assessment were supposed to be those of conglomerate mergers set in the Non-Horizontal Merger Guidelines. Booking argued that, according to the Non-Horizontal Merger Guidelines, conglomerate mergers may raise concerns only when the combined entity will have the ability and incentive to foreclose its competitors and that such foreclosure would have a significant impact on effective competition, such as by leveraging the entity's position in a market where it holds market power into a neighboring market. In particular, they believed that the EC unlawfully diverged from the Non-Horizontal Merger Guidelines *"by adopting an entirely new and legally unsound standard for the assessment of conglomerate mergers and confusing the Non-Horizontal Merger Guidelines with the Horizontal Merger Guidelines[21]."* In fact, Booking and ETG's view was that the EC raised concerns of reverse leveraging, by which Booking would have leveraged its position in the flight OTA market to consolidate its dominant position in the hotel OTA market. According to them, this was not explicitly foreseen in the Non-Horizontal Merger Guidelines.

[20] Horizontal Merger Guidelines (2004), para. 36, Non-Horizontal Merger Guidelines (2008), para. 49.
[21] European Commission (2023b), 25 September 2023, Case M.10615, *Booking/eTraveli*, para. 197.

In response to this, the EC referred to the EUMR, which states that, to ensure transparency in its merger assessments, the Commission may issue guidance that outlines an economic framework for evaluating whether a concentration is compatible with the internal market. However, such guidelines are not binding legal rules and do not serve as the legal foundation for the final decisions. They do not prevent the Commission from using "*the discretion the regulation confers on it, and they must be kept under continuous review for the purposes of anticipating any major developments not covered by those measures*[22]." While the Commission must follow the guidelines when they are expressed in mandatory terms, it has the authority to deviate from them in specific cases – the EC stresses - by providing adequate justification.

Furthermore, it was expressed how, given the evolving nature of market dynamics, the Non-Horizontal Merger Guidelines cannot exempt the Commission from its obligation to assess whether an M&A operation may significantly harm competition, even in scenarios not originally anticipated by those guidelines. The 2008 Guidelines themselves acknowledge they are based on the Commission's experience at that time and that their principles are meant to evolve through case-by-case application. They also clarify that guidance from the Horizontal Merger Guidelines is applicable to non-horizontal mergers, particularly when both types of effects are present.

As just mentioned, the Non-Horizontal Merger Guidelines do not restrict the Commission's analysis of competitive harm to only those scenarios explicitly mentioned within them. For example, in the *Booking/eTraveli* case, the Commission was concerned that Booking would have used its presence in the flight OTA market to reinforce its dominance in the hotel OTA market (a practice referred to as reverse leveraging by the notifying party). While this specific situation was not envisaged in the 2008 Guidelines, it was not excluded either.

Such circumstances have risen only more recently with the development of online ecosystems and were in fact already examined previously by the Commission. Therefore – according to the EC – Booking could not claim a violation of its legitimate right to equal treatment in this case. And yet, specifically with respect to foreclosure, the EC recalled that the Non-Horizontal Merger Guidelines do not require that foreclosure is established.

[22] Ibid., para. 200.

However – as stressed by the EC - this approach was in line with the suggested theories of harm identified by Crémer et al. (2019) in their *"*Commission's report on Competition policy for the digital era." In more detail, the report notes that, in cases where the acquirer operates an ecosystem that benefits from strong positive network effects, which act as a significant barrier to entry, *"the risk to competition resulting from an acquisition is not limited to the foreclosure of rivals' access to inputs, but extends to the strengthening of dominance as it fortifies the dominance of the ecosystem, in part because the new services add value to the consumers for which they are complements and in part because they help retain other users for which they are partial substitutes."*

As mentioned above, the EC made some references to traditional theories of harm. Nevertheless, Batra et al. (2024) note some deviations from such theories. In particular, the 2008 Guidelines on Non-Horizontal Mergers present the ability-incentive-effect framework. For conglomerate mergers, the assessment framework focuses on whether the merged entity possesses both the ability and the incentive to foreclose rivals and whether such foreclosure would ultimately result in higher prices or fewer options for consumers. This involves defining relevant markets and articulating a foreclosure or exclusion mechanism through which market power can be leveraged from one market to another by employing practices like, tying, bundling, and raising of rivals' costs.

The same authors specify how this framework is not necessarily sufficient in assessing mergers involving ecosystems because of its focus on defining relevant markets and on the conduct of the merged entity. In fact, in *Booking/eTraveli*, the Commission did not consider leveraging in the hotel OTA market and did not use the ability-incentive-effect framework. Likewise - as seen above - Booking and ETG stated the EC deviated from the Non-Horizontal Merger Guidelines and invented a new reverse leveraging framework.

At the same time, Batra et al. (2024) support EC's decision to consider customer behavior as a crucial factor in assessing entrenchment. According to them, it is fundamental to focus not only on the conduct of the merged entity but mostly on how a merger affects the structure of the market through consumer behavior. Characteristics like consumer inertia, limited prevalence and feasibility of multi-homing, and the existence of switching costs may not stem directly from the merged entity's actions, but they can still contribute to reinforcing its market position. And yet, because competition in ecosystem-based markets is heavily influenced by out-of-market forces, it is essential to examine consumer

behavior not only within the ecosystem's current markets but also in those where complementary relationships - actual or potential - may exist.

Additionally, the same authors (2024) seem to contest criticisms against EC's handling of the efficiency gains issue (the criticisms will be presented later). In their opinion, it is necessary that these short- and potentially long-term benefits are traded off against the weakening of the competition, the medium-term anti-competitive changes to the structure of markets, and the long-term risk of enduring foreclosure.

In sum, references made to the traditional theories of harm and the discretion used by the EC to apply the ecosystem theories of harm seem to find legal foundation and be in line with the approach proposed to contrast digital ecosystems' growing power.

Nevertheless, Peristerakis et al. (2025) note how this decision has drawn criticism on the basis that it relied on a theory of harm based on the strengthening of a dominant ecosystem for what is essentially a non-horizontal merger. Under the approach set out in the Non-Horizontal Merger Guidelines, non-horizontal mergers can only be blocked based on a theory of foreclosure or coordinated effects.

Although the Commission may base its decision to block the *Booking/eTraveli* transaction directly on the EUMR – the authors (2025) state - this approach raises important questions about the threshold for intervention. Notably, it remains unclear where the Commission intends to draw the line between acquisitions that lead to modest improvements within a digital ecosystem and those that contribute to the strengthening of a dominant position. If any enhancement to the core product of a digital ecosystem is regarded as problematic, the risk is to revert to an "efficiency offense" framework, where even procompetitive gains are treated with suspicion. This case thus brings the lens to the level of scrutiny that will apply when a digital ecosystem seeks to acquire complementary services or products.

Furthermore, according to Peristerakis et al. (2025), this type of assessment will need to be carried out on a case-by-case basis. It should also be noted that the Commission has looked at digital ecosystems' strengthening of dominance in previous cases - such as *Google/Fitbit, Google/Photomath, Amazon/MGM* - but dismissed such concerns, concluding that the acquisitions would not have significantly enhanced the acquirer's position in their respective core markets.

Likewise, Garces et al. (2024) highlight the need for outlining limiting principles – in developing a framework to assess ecosystem theories of harm – that allow firms and practitioners to better understand the factors that turn demand- and supply-side linkages across products/services into a competitive concern after an extraordinary operation. For instance, in ecosystem theories of harm, it is often unclear whether the mere demand-side connection between an existing platform product and a newly acquired one constitutes the issue, or whether the concern lies in a potentially harmful conduct that such a linkage might incentivize.

Additionally, the extent to which cross-selling opportunities and customer inertia alone raise concerns for EU regulators remains uncertain. It is unclear whether all forms of cross-selling linked to demand-side relationships would be viewed as problematic or how decisively factors such as consumer behavior influence the assessment of competitive harm. An approach that places significant weight on the mere presence of cross-selling potential and user tendencies as factors for intervention could mark an important shift in how foreclosure is understood in the context of non-horizontal mergers. Nevertheless, the point about the relevance of customer inertia in influencing a dominant position entrenchment seems to be addressed in the Commission's decision. In fact, the authority judged customer inertia as a crucial factor in strengthening Booking's power in the hotel OTA market.

Uncertainties about which aspects determine a competitive harm may trigger an ecosystem theories of harm application in nearly any merger where users, assets, or capabilities might be leveraged to strengthen the acquirer's broader business. This is why defining clear limiting principles would help ensure the development of concrete evidentiary thresholds and consistent standards for assessment (Garces et al., 2024). Furthermore, the authors (2024) criticize the unlikelihood of a drastic dismissal of efficiencies and argue that, in the face of significant demonstrable efficiencies, the threshold to highlight an anticompetitive harm might be set higher. At the same time, they suggest that companies provide clear and well-substantiated explanations of the benefits of the M&A operation to users.

Additionally, the same authors (2024) recommend that the EC develop more advanced tools to assess overlapping or complementary capabilities in order to gain a clearer understanding of how closely connected two businesses truly are. They also underscore

the importance of capturing industry trends and projecting the likely future of the market in articulating the procompetitive rationale behind acquisitions.

Another criticism to ecosystem theories of harm's application to *Booking/eTraveli* case – already mentioned in the previous chapter - was moved by Batra et al. (2024)

The authors (2024) contest the Commission's approach, which ruled the M&A operation was harmful for competition partially because Booking and ETG's positions in their markets were not replicable. In their opinion, this replicability approach does not fully account for all competitive constraints, as it does not consider the replicability of adding (combinations of) capabilities. In other words, other ecosystems - regardless of whether they operate directly in the flight or hotel OTA markets - could have still imposed a meaningful competitive constraint on the merged entity if they had competed at the broader ecosystem level. Alternatively, a smaller platform operating in a market complementary to either the hotel OTA or flight OTA sector could have merged with an ecosystem possessing capabilities comparable to those of Booking and/or ETG, thereby exerting competitive pressure without necessarily replicating their market positions. This is to stress the importance of assessing M&As involving ecosystems from both the product market level and the broader ecosystem level. Indeed, even if a merger does not produce anti-competitive effects within individual product markets, it may still raise concerns by distorting competition at the ecosystem level and vice versa.

In addition, Batra et al. (2024) seem to uphold the considerations about post-merger contestability of markets. They acknowledge that the consequences generated by a company's incorporation within a digital ecosystem can lead to the ecosystem's enforcement and expansion, which in turn lead to anti-competitive effects to market structure. In light of this, the same authors (2024) stress the fact that the assessment framework should reflect these evolving dynamics. It is essential to evaluate contestability at every level where it may be impacted, including individual relevant product markets, adjacent markets that offer complementarities with those of the merging firms, and the broader ecosystem layer itself.

Moreover, Gore et al. (2023) – who advised Booking throughout the UK and EU merger notifications – raise two other concerns in relation to the Commission's motivations to prohibit the M&A operation. First - according to them - by diverging from the Non-Horizontal Merger Guidelines, the EC set a very low threshold for intervening in

conglomerate mergers involving a firm with a perceived dominant position. Second, and closely related, this decision seems to recall the notion of an "efficiency offense", a theory of harm that justifies intervention not because rivals are being foreclosed, but because a leading firm grows by offering superior products. The authors (2023) heavily contest this standpoint. Indeed, if this interpretation holds, it would be troubling, as competition authorities should promote - not penalize - efficiency gains and product improvements that benefit consumers, even if they intensify competitive pressure on other market players.

Lastly, Bergqvist (2024) highlights how neither the Competition and Markets Authority (UK) nor the Federal Trade Commission (US) expressed concerns about the transaction. The former cited consumer research indicating that users frequently compared offerings across various OTAs, even after choosing their flights, and often completed their bookings directly through airlines, demonstrating overall price sensitivity. As a result, the UK authority considered the risk of service bundling and micro-nudging[23] to be minimal, which underpinned its standpoint that the deal did not raise concerns. In contrast, the Commission took a fundamentally different view. This raises questions about how two regulatory authorities could arrive at such opposing conclusions, particularly given that both based their assessments on real market data.

In conclusion, the EC is tentatively building a framework to address concerns around the competitive effects of ecosystems' expansion, which is starting to take shape, but there are many unresolved questions that will have to be addressed to avoid overenforcement. At the same time, it is important to acknowledge the growing power of tech firms orchestrating digital ecosystems and the dynamism they bring to digital markets. This is to partly justify the Commission's attempt to interpret traditional theories of harm and adapt them to new cases, even if these judgements do not strictly relate to past merger Guidelines. Lastly, and most importantly, it is crucial to establish a uniform approach across most relevant jurisdictions – namely, the EU, the UK and the USA – in order to achieve a fair treatment of tech giants' behaviors.

[23] This practice refers to the use of *"a well-timed small animation that prompts the user to do a "small" task that they may have otherwise forgotten or not have taken notice of"* (Zhang, 2018).

5. EUROPEAN-BORN DIGITAL ECOSYSTEMS AND THEIR M&A ACTIVITY: A QUALITATIVE STUDY

5.1. Gap identification

Although with the rise of the digital economy the interest towards digital platforms and their ecosystems has grown – as seen in the previous chapter - the literature has predominantly focused on Big Tech firms (Google, Apple, Meta, Amazon, and Microsoft) and, more in general, other large tech companies. Notably, studies around M&A activity occurring in digital markets seem to mostly consider – and bring examples of – tech giants' operations.

In addition, many antitrust authorities around the world showed interest in these large players' behavior. As Jin et al. (2023) report, the UK's Unlocking Digital Competition Report (2019), the Majority Staff Report on Investigation of Competition in Digital Markets (issued by the US Congress in 2020), and the US FTC staff report (2021) deeply analyzed the number of M&As performed by Big Tech firms. Likewise, Jin et al. (2023) notes that the Australian Competition & Consumer Commission's Digital Platforms Inquiry (2019), the French Competition Authority's Opinion on the Online Advertising Sector (2018), and the previously mentioned report to the European Commission, "Competition Policy for the Digital Era" (2019) delved into the topic.

Moreover, US and EU antitrust authorities have ruled to prevent the largest players in the digital space from harming competition through intense and unfair M&A activity. As widely analyzed in the second chapter, the DMA (2020) particularly caters to those companies designated as "gatekeepers", according to well-defined qualitative and quantitative criteria. The same rationale is followed by the Platform Competition and Opportunity Act (2021), which *"prohibits operators of covered platforms from acquiring the stock or other share capital or the assets of another person engaged in commerce or in any activity affecting commerce."*

Furthermore, even the Working Group on Competition Law of the German Competition Authority (2022) - when observing that many of the mergers occurring in digital markets involve target companies that had the potential to evolve into competitors of the acquiring firm - brought the cases of *Facebook/Instagram*, *Google/DoubleClick,* and *Google/YouTube*.

And yet, the EC's new theories of harm tailored to the realities of digital markets – widely explored in paragraph 3.2. - were mainly envisaged for and applied to cases involving large tech players that aimed at acquiring smaller firms.

In the literature, several relevant analyses and studies explicitly focus on Big Tech companies. For instance, Parker et al. (2021) take into account the acquisition strategies of Google, Amazon, Meta, Apple, and Microsoft since their birth; Jin et al. (2023) conduct a descriptive study of the same firms' M&A activities, comparing them to those of other top acquirers from 2010 to 2020; Barsy & Gautier (2024) contribute to the understanding of the effects of M&A performed by Big Tech companies on the evolution of the products and technologies obtained after the acquisition; Chang (2025) studies the acquisition records of Big Tech to understand their competitive acquisition behavior.

Overall, legislative acts, authoritative reports, and academic papers significantly cater to Big Tech firms or other tech giants, thus suggesting a strong interest in these players' actions. At the same time, digital markets are populated by many other entities who expand and try to establish their own digital ecosystems, which are often overshadowed by bigger – and more notorious – tech firms.

Consequently, this thesis shifts the empirical lens towards European[24] digital players and their M&A activity – analyzing the strategic rationales behind these extraordinary operations – thereby trying to partly integrate a literature that has mainly studied Big Tech companies. More specifically, the research question is the following: *why do European-born digital ecosystems decide to pursue M&A operations, and how do their strategies differ from each other, following industry-specific rationales?*

Before moving to the next paragraph, a premise is fundamental to clarify the scope of the study. The analysis of M&As undertaken by European digital platforms and ecosystems is meant to provide a high-level perspective of the strategic motivations behind these extraordinary operations that companies disclose and communicate. This research does not claim to find out the most in-depth and confidential factors leading to M&A activity, as this type of information remains within firms' boundaries, as it should be. Instead, the study tries to highlight the main patterns that emerge when analyzing European players'

[24] The term "European" refers to companies who are born in Europe, regardless they expanded their operations outside the continent or not.

actions. To summarize, the goal is to outline general, observable motivations behind European digital platforms' and ecosystems' M&A activity.

5.2. Methodology

The research has been conducted through a qualitative methodology, which is about the understanding of meaning. This type of research is interested in how people interpret their world and how they experience different events (Hignett & McDermott, 2015). Robson (2011) illustrates the key points in defining qualitative research. First, it is non-numerical; thus, it represents the world mainly with words and pictures rather than numbers. Second, it focuses on a few cases with several variables. Third, the sampling strategy may develop during the study, driven by an inductive process. Fourth, data collection and analysis are iterative, and the focus may change during the study. Fifth, the research is grounded in a context, and situations are described from the standpoint of participants. Sixth, the researcher can influence the study through his values and subjectivity.

Qualitative research is a methodology for scientific inquiry that puts the emphasis on the depth and richness of context and voice in exploring social phenomena (Lim, 2023). Its ultimate purpose is to find out the "what", "why", "when", "where", "who" and "how" behind behaviors and situations. Other important features of this type of research are adaptability and flexibility, as it aims at embracing a wide array of human experiences and points of view (Lim, 2025).

Qualitative methodology encompasses various approaches through which researchers can achieve phenomena understanding. This study adopts the grounded theory, a systematic approach wherein theory emerges from data collected (Lim, 2025), through an inductive process (Corbin & Strauss, 2015). Lim (2025) explains how the path, which is systematic and iterative, begins without previous theories. Indeed, theories organically rise thanks to the interaction between data collection, coding, and comparison/analysis. These three steps enable researchers to understand what is happening.

This research aims at exploring the strategic reasons behind M&A activity performed by European tech firms that manage their own digital ecosystems. To do so, it has been necessary to collect digital platforms' and ecosystems' perspectives, as well as (some) acquired firms' owners' standpoints to gain extra insights. Additionally, opinions and experiences stemming from relevant professionals active as tech M&A consultants in

Europe – who followed and supported many extraordinary operations during their careers – were collected in order to have a general understanding of the topic as well as an additional standpoint.

Consequently, this study encompasses multiple cases; hence, the most useful methodology is the Eisenhardt method. First and foremost, this method relies on Yin's work on cases – "Case Study Research: Design and Methods" (1984) - and Glaser and Strauss' grounded theory (1967), an iterative process of constant comparison of data and theory. Nevertheless, Eisenhardt's method's distinctive contribution consists in theory building from multiple cases. Theory is meant as *"a set of constructs linked together in relationships that are supported by theoretical arguments that seek to explain a focal phenomenon"* (Eisenhardt, 2021). Eisenhardt (2021) explains the main features of this method. First, it addresses research questions for which there is little prior theory and/or empirical evidence. Second, the method emphasizes careful case selection; this means selecting situations where the focal phenomenon is likely to occur and similarities and differences across cases can improve theory building. It is important that the considerations enhance generalizability. Third, the method fosters the development of constructs and measures during the analysis, as constructs are essential components of any theory, and measures are useful to ensure that the new theory is testable. More in general, it is important to iteratively organize and group raw data and then create high-level conceptualizations (Walsh et al., 2015). Fourth, the Eisenhardt method requires identifying boundary conditions to clarify the scope of the analysis.

Eisenhardt (2021) stresses how this method does not require a particular type of data. This means that interviews, archival data, ethnographies, and observations can be used, even jointly.

In this study, the necessary information was gathered as both primary and secondary data. Primary data have been collected directly by the researcher through interviews, though following different ways. Secondary data come from interviews with companies' CEOs, official press releases, statements on company websites, and articles from relevant sources. The decision to integrate different sources stems from – first and foremost - the impossibility of reaching out and getting an answer from European digital platforms' and ecosystems' owners and tech M&A professionals the researcher wanted to interview. However – after dozens of attempts - some decided to consider the research and accepted

the invitation to talk about the strategic reasoning that leads European digital players to grow through extraordinary operations.

Overall - even if collecting primary data gives the opportunity to perform a novel and unbiased study, allowing flexibility during the data collection process - the impossibility of performing totally primary data-based research was not seen as an indicator of a decreased quality of the work but as an opportunity to analyze other relevant sources and compare the results. While the opportunity to interview firsthand CEOs and founders of European digital companies would have been invaluable, a thorough examination of different sources provided meaningful insights.

In general, secondary data collected – after going through a screening and interpretation process – unveiled relevant conclusions around the topic of discussion. Indeed, Eisenhardt himself (2021) states that many multi-case theory-building studies (like this one) use interviews and archival data.

When conducting qualitative research, there is little logic in pursuing random or probability sampling. The people, contexts, and documents must be chosen purposively *"often because they constitute typical cases or extreme cases or a range of cases to achieve as much variation as possible"* (Shaw & Holland, 2014). And yet, Patton (2002) notes how purposeful sampling is a distinctive element of qualitative research, as it enables the selection of information-rich cases to be studied. Indeed, according to Patton (2002), these cases are those from which the researcher can get useful information for the sake of the inquiry, thus extracting insights and deep understanding. Purposive sampling requires the researcher to intentionally select those people, situations, and documents that can help accomplish its research goal (Staller, 2021).

Accordingly, the first step in selecting the sample was to choose the type of companies to take into consideration. In this sense, firms that operate in the digital space and own a digital platform and a nascent digital ecosystem were considered consistent with the study. This choice was driven by the interest in finding some players who do not have a wide digital ecosystem yet but have the potential to expand in the future and build a well-established reality through the integration of other services or products and international expansion.

The other type of firms the study was interested in concerned those who already own and manage their own solid digital ecosystems, composed of several actors who are aligned

and agree to pursue a focal value proposition (Adner, 2017), who exhibit varying types of mutual dependencies, and who play different roles (Jacobides et al., 2018). These players, who have been building these strong networks for years, represent a fitting sample for this study: they are well-established in the digital landscape and carried out several M&A operations to grow, but their scale is smaller than that of Big Tech companies; thus, they did not catch scholars' and authorities' attention as Google, Apple, Meta, Amazon, and Microsoft did over the years. Nevertheless, they are rather notorious and well-known, hence favoring information search.

The second step in selecting the sample was to define the geographical origin of the platforms and ecosystems. A caveat: geographical origin differs from geographical scope. It was important to pick firms born in Europe, grown up in Europe, and consolidated in Europe, even if some of them expanded their operations outside Europe subsequently. This choice was driven by three main reasons. First, digital markets are by nature global; thus, analyzing players born worldwide would have resulted in an excessively broad scope. Some may legitimately state that, to further frame the scope of the research, an industry subdivision might have been consistent. However, no segmentation was adopted, both because – as widely explained in the previous chapters – boundaries in digital markets often nuance and overlap, and because this study purposefully is not intended to be limited to a single industry but rather to provide a high-level view of how European digital platforms and ecosystems – operating in different industries - pursue M&A activity. Differences in the industries' selection result in differences in scale. However, the purpose of this analysis is to highlight rationales behind M&A transactions across several players that operate within different industries - regardless of their differences – to try to outline common (and distinct) pathways to growth. Second, having the literature extensively studied Big Tech firms' digital ecosystems – which are born in the USA – this research aimed at shifting the lens towards European-born digital actors. Third, this study widely engages with the European regulatory framework – including the DMA, the DSA, the GDPR, and the AI act – and presents the *Booking/eTraveli* case, tackled by the European Commission. Therefore, considering European firms, who must comply with this regulatory framework more than other digital players spread worldwide, seemed to be coherent.

The third step in sample selection consisted in identifying professional figures who could provide a better understanding of European tech M&A markets. Consequently, the purpose was to find M&A advisors or strategy consultants working in investment banks or consulting firms (within their M&A practices), with substantial knowledge of European technology markets and a minimum of five years of professional experience in such roles. Identifying and reaching out to such profiles turned out to be challenging, and in most cases, the invitations to participate in the interviews were disregarded. Nevertheless, those who accepted to provide answers to the questions – although understandably unable to reveal client names or specific transaction details due to confidentiality constraints – shared general but interesting insights and considerations that enriched the analysis.

As mentioned above, information gathered comes from both primary and secondary data. Primary data stems from direct interviews – a total of 6 - with some digital platforms' owners and tech M&A experts.

The first one to be interviewed was Marco Lecchi (reached out via LinkedIn), founder of TopSquad, a network of Bocconi students who decided to start helping hundreds of high school students prepare for admission every year. They sell courses, manuals, and simulators to those who want to be admitted to the bachelor's degree and master's degree at Bocconi (TopSquad, 2025). The conversation with him has been done via Google Meet. Since the company has been acquired by Testbusters (it will be presented shortly after), the interview was aimed at exploring the rationale behind the acquisition even from the sell-side's perspective, to get a 360° outlook of the transaction.

In fact, the interviewee facilitated the link to Ludovico Callerio, co-founder and CEO of Testbusters, an Italian edtech company which defines itself as *"a community of more than 1000 people, including teachers-students, and collaborators, spread throughout Italy."*

The company originally started selling online or classroom courses to those who seek admission to the faculty of medicine in Italy and then expanded its business to other educational areas, even thanks to M&A operations. Testbusters is made up of a core team of 30 people who work in the Milan headquarters and a community of more than 1000 teachers/tutors, *"Testbusters beating heart",* spread throughout Italy who provide courses and advisory to students (Testbusters, 2025a). This description suggests that courses are delivered by this large community of students through - and under the commercial

trademark – Testbusters. For the sake of the analysis, this qualifies Testbusters as a digital platform, which sells educational courses to aspiring university students through a network of tutors/teachers who deliver courses and provide support. The interviewee was reached out to email and replied to the questions in the same way.

The third interview concerned Fabio Nalucci, chairman and founder of LimoLane, *"the premium mobility platform for transfers and events"* (LimoLane, 2025a). This digital platform is devised for corporate clients and connects them to professional drivers. It was born in Italy and expanded its activity across over 500 cities worldwide. The interviewee was contacted via LinkedIn and interviewed via Google Meet.

Another enriching contribution was provided by Raffaele Perrone, a PwC – a consulting firm operating all over the world - partner for the Italian subsidiary who leads the M&A tech and venture growth team, which includes experts in M&A for technology businesses and fast-growing companies. In his 25-year career, he has been supporting many extraordinary operations from the buy-side and sell-side perspectives, both on a national and international scale and both with private firms and private equity operators. Since the researcher works at PwC Italy in the Milan office, the interviewee has been contacted through a network of directors and partners who enabled the interaction. The face-to-face interview was held in the partner's office at PwC's Milan office.

The fifth interview was addressed to Milan Saric-Toplica, a managing director of tech M&A, software & cybersecurity at Lincoln International - a global investment bank operating across 16 countries – at the Munich office. He joined the company in 2022, but he has been specializing in M&A practice since 2005; during his professional career he worked for PwC Germany for 6 years and for goetzpartners - (now Fortlane Partners), an advisory firm for strategy, M&As, and transformation – for 10 years and for Houlihan Lokey – a global investment bank - for a few months. The interviewee was reached out to via LinkedIn and answered the questions via email.

The last interview involved Stephane Fadda, principal in the tech & IT M&A advisory practice in BearingPoint – a management and technology consulting firm operating across more than 30 countries – at the Paris office. The interviewee has more than 20 years of experience: he spent 12 years in consulting firms and 8 years in companies specialized in defining digital strategies, in which he assessed many firms directly during M&A deals

(IT or tech due diligence). Once again, the professional was contacted via LinkedIn and replied by email to the questions.

All the information about interviewees' backgrounds was collected either during the interview or on their LinkedIn profiles.

Interviews done face-to-face or via Google Meet were semi-structured. They followed a guide focused on a core topic devised prior to the interview, but they also allowed for discovery, with space to follow topical trajectories as the conversation went on. (Magaldi & Berler, 2018). The other three interviews were carried out by email. Asynchronous email interviewing consists of an exchange of email communication between researcher and participant, which affords time flexibility, privacy, and visual anonymity (Ratislavová & Ratislav, 2014). This method may be especially effective in communicating with busy working professionals who can respond according to their schedules (Amri et al., 2021). Nevertheless, it may bring some drawbacks, such as the provision of short, superficial responses and the inability to ask for additional information or clarification in real time (Amri et al., 2021).

Each interviewee was asked questions that revolve around the following points:

- strategic thinking that led the companies (whether buy-side or sell-side) to pursue (or accept) the M&A transaction; this was asked both to digital platforms' owners and tech M&A professionals;
- motivations, objectives or pressures that drove this decision, whether from the perspective of growth, competition or other internal factors; this was asked both to digital platforms' owners and tech M&A professionals;
- most significant operational, cultural or strategic obstacles buy-sides encountered during such transactions; this was asked both to digital platforms' owners and tech M&A professionals;
- how the above-mentioned obstacles were mitigated; this was asked both to digital platforms' owners and tech M&A professionals;
- tech M&A professionals' contributions in getting over these obstacles; this was asked only to the professionals;
- main uncertainties, threats or perceived risks on the part of the sell-sides that arose during the M&A process; this was asked both to digital platforms' owners and tech M&A professionals;

- how the above-mentioned hurdles affected the negotiation dynamics and how they were mitigated; this was asked both to digital platforms' owners and tech M&A professionals;
- tech M&A professionals' roles in supporting sell-sides; this was asked only to the professionals;
- EU regulatory framework influence on deal success; this was asked both to digital platforms' owners and tech M&A professionals.

As for secondary data, the researcher decided to gather information from articles made by relevant sources, official press releases, statements on company websites, and CEOs interviews. Companies under the lens were European digital players who managed to build their own digital ecosystems over the years, partially through several M&A operations. Players under analysis were four.

The first one to be considered was ShopFully – born in 2010 under the name DoveCoviene, then rebranded - an Italian platform that connects 200 million shoppers with hundreds of top retailers, brands, and publishers, giving the former the possibility to find deals they are looking for while boosting local sales for the latter (ShopFully, 2025a). Thanks to a series of acquisitions, it expanded its proprietary digital marketplaces, thus integrating other digital platforms and creating a digital ecosystem (benefiting from many other adjacent services). Afterwards, it merged with two other digital players - one is European and active in providing digital marketing solutions, and the other one is North American and active in drive-to-store; they will be presented in the next paragraph - and the combined entity became a leading global drive-to-store ecosystem

The second digital ecosystem under investigation was Nexi. It is the Italian paytech leader – born in 2017 - that processes payments between banks, merchants, companies, consumers, and institutions. It also integrates merchant acquiring, POS devices, card issuing, digital wallets, e-commerce solutions, fraud prevention, and other services (Nexi Group, 2025a). Like ShopFully, thanks to its M&A activity – especially after the mergers with two European paytech players – it became a leading European ecosystem in the paytech industry under the name of Nexi Group.

Vinted – born in 2008 - was the third digital ecosystem analyzed. Vinted is a Lithuanian second-hand fashion app – it also enables the sale of electronic devices, home devices, entertainment products, and sports goods - which connects sellers and buyers in one place

(Vinted, 2025). Thanks to its provision of in-app payments, logistics integration (thanks to a network of delivery companies), and a broad community of people, it built a well-established digital ecosystem, consolidated through the acquisitions of rival startups and delivery firms.

The last digital ecosystem under the lens was Delivery Hero, a global multicategory delivery company – which operates in 70+ countries across Europe, Asia, the Americas, and Africa under many brands - born in Germany in 2011. It connects customers, restaurants, local shops, grocery stores, partners, and riders, orchestrating a network spread worldwide. Through its platforms, Delivery Hero provides a wide range of services such as food delivery, grocery delivery, quick commerce solutions (Q-commerce), AdTech solutions (for restaurants, grocery stores, and local shops), and payment processing. Quick commerce solutions are powered by Delivery Hero's Dmarts (delivery-only supermarkets), which are backed by centrally located warehouses (Delivery Hero, 2025a; Delivery Hero, 2022). This global network has mainly been built through dozens of M&A operations.

Lastly, to integrate insights stemming from primary data, secondary data concerning Testbusters and LimoLane's M&A activity were collected, always looking for the type of sources mentioned above.

As regards the coding part, the first step was to get the authorization from interviewees to report their contributions in Microsoft Word. Additionally, those who have been interviewed face-to-face and via Google Meet were asked to grant authorization to be recorded. Once all the contributions have been collected, they have been reported in a distinct Microsoft Word file for each firm and M&A expert interviewed (only statements from the TopSquad founder and Testbusters CEO were included in the same document, as they belong to a single case study).

This preliminary organization has been instrumental in tracking the case studies under investigation – namely Testbusters, LimoLane, ShopFully, Nexi, Vinted, and Delivery Hero – and the contributions from tech M&A experts.

As the literature review stressed some meaningful insights, some strategic motivations behind M&A activity occurring in digital markets had already been noted in each file. Subsequently, each company's and each tech M&A professional's contributions were rationalized in a way that categories could arise, even with the aid of previously

mentioned literature contributions. Therefore, the coding phase followed both an inductive and a deductive approach. The latter is used when some views, or conceptual frameworks regarding the phenomenon of interest, exist (Mayring, 2014). The analysis has begun, using the pre-existing M&A drivers suggested by the scholars' contributions and authorities' evidence about M&A operations in the digital markets. However, when some part of the text did not fit the categories already created, new measures and constructs "inductively" emerged (Elo & Kyngäs, 2008). Through the above-explained process, strategic reasons behind digital platforms' and ecosystems' M&A activity have been summarized. Subsequently, tech M&A professionals' perspectives have been gathered together - to get a first understanding of the topic under analysis - and European digital platforms' and ecosystems' outcomes have been compared to let insights come out.

This structured yet flexible analytical approach enabled a high-level but interesting understanding of the topic: it made it possible for both common and different trends to emerge, thus allowing similarities and differences to be highlighted.

5.3. Results and discussion

First and foremost, outcomes stemming from the interviews with tech M&A professionals have been gathered and merged to try to outline a high-level understanding of the European tech M&A market.

Before illustrating their contributions, it is fundamental to stress how, in their statements, they embrace all tech markets, with different sub-sectors and players. These players include both those who own a digital platform and a digital ecosystem and those who do not and operate following a different business model.

First and foremost, interviewees wanted to highlight the following concept. When analyzing M&A operations, it is important to take into account the geographical context, the economic factors, the market dynamics and competition, the international political contexts, and the technological factors wherein the operation will develop. In fact, these drivers affect markets, which in turn impact companies and their strategic decisions. Moreover – the interviewees added – it is relevant to consider the size of the companies who are involved in a transaction as well as the size of competitors. More importantly, deals are often impacted by the leadership style of those who are in charge of taking

decisions about extraordinary operations. Some firms are more conservative: they grow slowly, without debt and without injecting external capital, whereas other firms know that, without M&A activity, accelerated growth cannot occur.

Having reported these premises, the experts provided relevant insights about common obstacles encountered by both buy-sides and sell-sides during the M&A process as well as their role in helping clients get over them. The greatest challenge – according to M&A experts' experiences – is to manage the deal as efficiently as possible to facilitate integration as quickly as possible. Their role is to deliver added value post-deal, and, in this sense, making synergies – both revenue synergies, cost synergies, financial synergies, and operational synergies – emerge represents a crucial aspect to enable integration.

The latter is also facilitated by rationalization of values and culture between the two parties and knowledge transfer. In their view, on the one hand, a shared culture empowers internal trust and collaboration among team members. On the other hand, professionals state that knowledge transfer plays a critical role in catching intangible synergies: by sharing expertise, know-how, and best practices, companies can avoid extra effort and accelerate decision-making. In interviewees' opinion, personal fit is a greater issue to manage than strategic fit.

Related to know-how, another issue concerns its detection and evaluation. Companies may struggle in quantifying it and integrating it within the price of the transaction; hence, these professionals explain how their role also concerns finding a fair value for know-how assessment.

Another problem that can arise along the M&A process is reconciling the expectations of both parties regarding price. Interviewees reported that disagreements about valuation are among the most common sources of tensions in negotiations.

Furthermore, it is noted how integrating the two entities from a managerial perspective represents a challenge. Indeed, managers can have different leadership styles that sometimes cannot match at all. In these cases, the role of these professionals is to ensure that few clashes arise in the future at a management level. Consequently, they may suggest demoting or firing some managers. Milan Saric-Toplica summarized this topic with the expression *"finding the right mix in the final management structure."*

Another point that emerged during their interviews concerns past legal and tax issues. They are not often explicitly mentioned during the main discussions among parties but

can emerge as investigations within a company structure go on. To overcome these risks, tech M&A experts help integrate and quantify them within the final price. In this sense, Stephane Fadda stressed: *"Operational difficulties are often the access to information and the ability to analyze them correctly in the short time left for the due diligence processes."*

These professionals work closely with the buy-side to align the strategy and target of the transaction as well as to decide the way of financing the operation. Likewise, they put a lot of effort in explaining to the sell-side the future benefits of the deal.

Additionally, the interviewees explained how the M&A process can take a long time to be completed. In lieu of that, they are also responsible for making sure that the decision makers continue to be interested in the transaction.

Moreover, Raffaele Perrone gave some insights about some recurring trends in sell-side motivations to sell. The first one concerns the willingness to extract value from the company and translate it into financial resources: some founders believe their firms have reached maturity after years of growth and decide to exit the business. The second motivation is about the acknowledgment of a situation wherein the growth cannot be sustained by internal resources or debt anymore. In this way, external players get the majority of the firm's shares and boost its growth. Other reasons behind the sale of a business may embrace more personal aspects, such as the absence of a next generation that can lead the firm or the desire to change markets.

As for the questions about the impact of European regulation – presented in chapter 2 - on the M&A process, the interviewees reported that they typically affect a small percentage of deals. Most of them are simply not impacted, or at least, not more than any business regulation covered by the legal due diligence. If the deal is impacted, it is often well anticipated and prepared, and the needed weeks of regulatory study are added to the planning. Overall, regulations are typically analyzed and dealt with from the beginning.

As regards most recurring motivations behind M&A activity that emerged from the interviews, a consideration needs to be done. These tech M&A experts have experienced many deals during their long careers across different countries and industries. They have dealt with many clients, each with their own peculiarities and hidden motivations that could not be disclosed to this research. Therefore, they provided a high-level outlook of what the European tech M&A market is as of today.

Below, a summary of the motivations behind M&A in the European tech market – mostly stemming from professionals' contributions, but also from literature review and investigated digital ecosystems analysis - is presented, clustered under five wider categories.

The following motivations are gathered under the cluster "market consolidation and expansion":

- international expansion;
- new industry entry;
- customer base expansion;
- competition removal;
- industry consolidation;
- market opportunity.

The following motivations are gathered under the cluster "product/service portfolio expansion":

- products/services range increase;
- product/service complementarity achievement;
- addition of adjacent functionalities/products/services;
- value chain integration.

The following motivations are gathered under the cluster "capability and knowledge acquisition":

- managerial skills acquisition;
- non-existing knowledge/capabilities acquisition.

The following motivations are gathered under the cluster "shared culture and mission":

- shared values and culture;
- mission and vision alignment.

The following motivations are gathered under the cluster "financial and efficiency motivations":

- acceleration of growth in the scope of operations;
- revenue growth, cost reduction, profitability improvement, company valuation increase.

After having displayed a summary of the strategic reasons spread throughout the European tech M&A market, the research takes into consideration the first case under

investigation: Testbusters digital platform, the Italian edtech company that provides preparatory courses for university admissions for students, exploiting its network of over 1000 teachers/tutors (Testbusters, 2025a).

The first contribution analyzed is that of Marco Lecchi, who sold his business TopSquad to Testbusters in 2025 while remaining in charge of the strategic direction of TopSquad, now a Testbusters business unit. He stated that the proposal came unexpectedly, even though the idea of exiting had always been there from the beginning, both for professional and personal reasons.

Once reached out to by Testbusters he matured some reasons to sell its business. The first one concerned the growing competition in TopSquad's edtech market, characterized by small players who offered some educational services free of charge, thus stealing some customers. The second one was about Marco's difficulties in carrying on his company alone. He did not manage to orchestrate both the strategy and the execution by himself anymore. Another relevant reason to sell was the culture and values alignment with the buy-side. As Marco stressed, *"Testbusters intended to provide a top-notch end-user service, which was aligned with my objectives that always had the focus on helping students."* Furthermore, the interviewee acknowledged its business was about to reach a maturity such that he could extract a fair financial value from a sale. This likely motivation to sell on the part of acquired firms was also presented by Raffaele Perrone above.

Marco Lecchi – when talking about reasons that pushed him to sell - also mentioned his desire to get to know a larger company than his, operating in the same macro-industry (the edtech market). In addition, he wanted to explore business strategies applied by Testbusters to expand. And yet, the interviewee wanted to grow professionally by working side by side with professionals with more experience in the industry. Marco added how this deal empowered his reputation and status.

Nevertheless, Marco Lecchi reported some doubts along the way to the deal's conclusion. First, he was concerned that Testbusters wanted to acquire TopSquad and wipe its service out of the market. However, a written covenant stated that TopSquad would have kept living within Testbusters' group. Second, he was worried that the acquisition aimed only at embedding Marco Lecchi's professional figure within Testbusters to exploit his know-how, without being interested in TopSquad itself and the service it offered to students.

Third, other fears regarded the extent to which TopSquad and Testbusters strategies would have been aligned and how committing the integration between the two companies would have been. As previously seen, these are recurring trends in the M&A process. Moreover, further obstacles concerned the financial valuation model to be used when assessing TopSquad's value and the integration of Marco's know-how within the final price. Once again, these hurdles have been presented by tech M&A professionals above. However, all these doubts were addressed, and the acquisition concluded.

After having obtained the sell-side's point of view, it is the moment to present the buy-side's reasons behind this transaction. Ludovico Callerio, co-founder and CEO of Testbusters, explained how they did not manage to position themselves as they wanted in Bocconi admission's educational market; thus, they needed *"a valid project with someone strong and promising leading the business, perhaps with roots in Bocconi."*

He also added, *"Marco and Topsquad met all these requirements; moreover, I found Marco to also be very aligned with the Testbusters culture and values. Without this element we probably would not have closed the deal."* This concept was previously stressed in a press release (Testbusters, 2025b) wherein Ludovi Callerio stated: *"This acquisition stems from our shared understanding of the importance of a peer education approach with TopSquad: effective, accessible teaching, and, above all, focused on the real needs of students."* Ludovico Callerio highlighted how Bocconi admission's educational market was not penetrated enough: *"Among the various micro-niches in the market (admission tests that deserve dedicated attention), it was the last one for which we did not have such a specific offering yet. We had courses and books, but not such a specific and specialized community and services."* Therefore, by analyzing these statements – and according to the previously presented categorization - it can be inferred that the main drivers behind this operation were products/services range increase (Bocconi admission courses), reaching unserved customers, non-existing knowledge/capabilities acquisition, values, culture, and mission and vision alignment.

In 2023, Testbusters acquired the British group UniAdmissions, a leader in preparation for admission to Oxford and Cambridge. According to a mutual press release between the two companies (Testbusters & UniAdmissions, 2023), *"the aim of the agreement was to create a new European and international player, capable of reaching over 60,000 students annually with its services."* This was possible thanks to the complementarities

between the two players. In fact – as stated in the press release – the aim of the acquisition was also to combine the peer education model of TestBusters with the international experience of UniAdmissions and its digital ecosystem spread in the UK. Ludovico Callerio summarized these motivations behind the operation in the following statement: "*The acquisition of an international player like UniAdmissions, the world's leading preparation school for Oxford and Cambridge universities, represents TestBusters' entry into a new international dimension. Together, we are convinced we can begin a new era for test prep companies, combining the complementary expertise of both to help UniAdmissions become the leading global reference point for preparation for UK university entrance exams, and thus offer unparalleled educational experiences."*

To sum up - according to what has been reported - international expansion, product/service complementarity achievement, and expertise combination were the three main drivers.

Last Testbusters' acquisition (occurred in 2025) involved Ammesso.it, an application designed to provide exercises and simulations that can be customized by length, subject, and for various university admission tests. As stated in a press release written in conjunction with Ammesso.it (Testbusters, 2025c), it was specified how this service both allows students to create modular exercises and simulations and track their results as well as the company to expand the range of digital resources offered. And yet, this deal was part of a broader technological development plan that aimed at enhancing the tools available to students to prepare for admission tests. In this view, this technological development plan will see Marco, founder of Ammesso.it, at Testbusters' side. As happened with TopSquad founder, with this operation, Testbusters seemed to want to add new capabilities useful to improve its final offering. However, from a wider perspective, this new resource integration can also be seen as an addition of an adjacent functionality/service, which revolves around the core offering (preparation courses for students).

In sum - after having analyzed these three business cases, and according to the categorization created – the main driver behind Testbusters' M&A strategies was "product/service portfolio expansion" (whose most relevant subdrivers were the addition of new products/services, of adjacent functionalities/services, and of products/services complementarity achievement), followed by "capability and knowledge acquisition",

“market consolidation and expansion” (with a focus on the international expansion), and, slightly less important, “shared culture and values.” In conclusion, these acquisitions represented a tool to start creating a (small) digital ecosystem.

Now, it is the moment to take into account LimoLane’s M&A activity, by the insights that emerged from the conversation with its founder, Fabio Nalucci. Limolane is a premium mobility platform for transfers and events (LimoLane, 2025a). It is devised for corporate clients and connects them to professional drivers.

LimoLane’s business idea arose when Fabio spotted an opportunity in the fragmented private chauffeur market. In fact, this market was previously made up of small businesses with up to 25 employees or self-employed workers, and the main customers were corporate clients (served by larger companies) and private citizens (served by self-employed workers).

LimoLane was born in 2020, when Fabio purchased a private chauffeur company operating in Milan. His rationale was to enter a new market, characterized by unserved demand for high-end service and great opportunities for growth. Indeed – in Fabio’s vision – the expansion of this market was slowed down by digital backwardness; thus, LimoLane positioned itself as a digital enabler of a premium service catering to corporate clients.

The acquisition of the first private chauffeur company – other than for market rationales – was also instrumental to acquire industry-specific know-how, useful to develop Fabio’s project to devise a platform connecting clients with drivers.

Over the years, LimoLane grew and expanded its operations abroad, thanks to its network of operators.

In 2024, the premium mobility digital platform acquired First Travel Italy, an established company serving the same customers as LimoLane, operating both on a national and international scale. As Francesco Righetti - CEO of LimoLane – stated, *“this operation was part of LimoLane's consolidation strategy as a market leader in Italy and will continue with determination in 2025, including international expansion”* (Missionline, 2024). In addition, First Travel Italy managed leisure travel transport services, a segment LimoLane did not serve yet. Indeed - as Fabio highlighted - this deal aimed at acquiring new large customers like tour operators. Moreover, First Travel Italy owned another business unit, called “First Guest,” which offered programs for luxury vacations in Italy

(First Travel Italy, 2025). In this sense, it can be inferred that the First Travel Italy acquisition was also aimed at adding this adjacent service around the core offering of leisure travel transport services. This new adjacent service, together with the other adjacent services/functionalities revolving around the core events mobility service – such as a dedicated event team, experts in logistics, hostess service, 24/7 customer support, and city tours (LimoLane, 2025b) – represents features typical of a digital ecosystem – still not completely consolidated, but with a high potential - made up of a core offering (premium mobility service) and the just-mentioned services supporting it.

In sum, the First Travel Italy transaction was mainly driven by the following factors: market consolidation in Italy; unserved customers reach - which goes side by side with new service addition (leisure travel transport service); - acquisition of a competitor and further international expansion (LimoLane already operated abroad but strengthened its expansion with this operation); and, less relevant, addition of an adjacent service ("First Guest" service).

Still in 2024, LimoLane acquired Service Vill, a chauffeur service mainly operating in the north of Italy and Switzerland, providing the same services as LimoLane. In addition, it also organized transfers for private events (such as weddings). This feature – as Fabio Nalucci explained – led LimoLane to conclude the operation - since the premium mobility platform did not serve private events – enabling customer base expansion and the addition of a service catering to this type of event.

At the end of 2024, LimoLane acquired Asia Car Service, a company providing private ground transportation services for business and leisure travelers visiting East Asia and Southeast Asia (Asia Car Service, 2025). The company was a leader in providing the service to American and foreign citizens in that geographical area, where language barriers discouraged consumers from using taxis or directly seeking a mobility service. First, through this operation, LimoLane wanted *"to ensure its positioning and expansion in the Asian market."* Second – as Fabio Nalucci highlighted – they wanted *"to use Asia Car Service's customer base to operate in the USA as well"* (Asia Car Service's customers were in fact mainly American). LimoLane saw cross-selling opportunities by leveraging this customer base to be able to serve them in the USA as well (LimoLane is already in that region).

Therefore, reasons behind this acquisition can be summarized as follows: international expansion into a new geographical area (Asian market) and unserved customer reach (American citizens in the USA who used Asia Car Service).

Behind all the above-mentioned acquisitions, there were also financial drivers. As Fabio stated, LimoLane pursued a "buy & build" growth strategy from the beginning. The idea was to acquire traditional companies and integrate them within the digital ecosystem to achieve synergies. As a consequence, thanks to this integration, the equity values of the single entities increased, and, by combining these values together, the overall financial valuation of LimoLane grew significantly.

On the other hand, during the interview, Fabio talked about some obstacles he met along the M&A process across the presented deals. First, he experienced cultural hurdles, represented by *"the difficult dialogue with distrustful entrepreneurs, who did not understand technical language."* Second, he reported integration issues between LimoLane's team and the acquired firms' teams, due to the lack of expertise of the latter. Nevertheless, it is important to remark how Fabio always commits, under contract, to ensuring that former employees remain with the company for at least 24 months.

He concluded the interview by anticipating LimoLane's short-term plan to acquire players in the UK and the USA because *"in these markets, it is necessary to grow above all through M&A activities, which guarantee a boost to expand in highly competitive contexts."*

After the presentation of these examples, it is time to rank M&A strategies pursued by LimoLane, according to the researcher's assessment. Most importantly, the main driver was "market consolidation and expansion", better explained with sub-drivers customer base growth, international expansion, and industry consolidation (in Italy). Competition removal is considered another important factor behind LimoLane's acquisitions.

The interview with Fabio Nalucci and the CEO's statement reported put a lot of emphasis on expanding abroad and the need to serve new customers as well as on the consolidation of LimoLane's position in the Italian market. Secondly, "financial and efficiency motivations" were relevant, considering LimoLane's purpose to significantly increase its overall financial valuation and its goal to accelerate its operations in the American and British markets. The last driver was "product/service portfolio expansion", explained with the broadened offering to private event clients and leisure travelers.

So far, two examples of digital platforms that are building their own digital ecosystem have been considered.

Now, the study shifts the lens towards well-established digital ecosystems that have European origins and have extensively expanded internationally.

ShopFully (founded in Italy in 2010 under the name DoveCoviene, the rebranded) – a global leader in drive-to-store, connecting 200 million shoppers with hundreds of top retailers, brands, and publishers (ShopFully, 2025a) – is the first one to be analyzed.

ShopFully's digital ecosystem manages several marketplaces – such as ShopFully, PromoQui, VolantinoFacile, and Tiendeo – and – after the mergers with Media Central Group and Flipp, the combined entity achieved a global reach.

In addition, ShopFully provides a wide range of services to brands and retailers. It integrates HI! (Hyperlocal Intelligence), a proprietary AI-based platform designed to help retailers to target shoppers and run effective and measurable hyperlocal campaigns. Furthermore, it offers many drive-to-store campaigns to retailers to drive awareness and engagement. It also analyzes media strategies at a hyperlocal level, helping brands to optimize the local media mix. Additionally, ShopFully technology creates, distributes, and monetizes catalogues and promotional content (Shopfully, 2025b). And yet, further services and capabilities were added after the mergers with Media Central Group and Flipp, giving birth to a global digital ecosystem active in the drive-to-store industry.

Prior to the mergers, ShopFully pursued intensive M&A activity.

In 2020, it acquired the Italian competitor PromoQui S.p.A. and added two new marketplaces to its offering: PromoQui and VolantinoFacile. In a press release (ShopFully, 2020), the CEO Stefano Portu stated how this acquisition primarily aimed at the consolidation and increase of market share in Italy along with competition removal: *"ShopFully is reinforcing its role of leader in enabling in-store shopping with this acquisition."* Additionally, the concepts of service complementarity and know-how acquisition were also relevant, as stressed by Constantin Wiethaus and Milo Zagari, the two CEOs of PromoQui S.p.A.: *"Combining our assets, teams, and competitive advantages, we are contributing to strengthen the position of ShopFully as the indisputable leader in Italy, able to support and reinforce the retailers, and even more so in the epoch-defining period we are witnessing currently."*

This deal was further driven by another reason: ShopFully saw a great market opportunity during the Covid-19 pandemic, as stated by Portu: *"Digital transformation is a key accelerator to restart the businesses hit by Covid-19 restrictions. We are seeing clear signals both from consumers […] as well as from retailers, who in these months have essentially abandoned paper flyers and confirmed they can compensate effectively digitally. We believe these are two facets of the same trend, where the smartphone will be the remote-control for in-store shopping, used in all the steps from pre-visit preparation to shopping."* Despite the overall downturn, in such a tough moment, the company remained focused on achieving success and explored the potential of integrating two other platforms that provided the same services as ShopFully (which owned its own marketplace DoveConviene at the time). This vision enabled the firm to grow further over the following years.

In 2022, a Spanish drive-to-store company active in Southern Europe, Latin America, and South Africa - called Tiendeo - was acquired. In a press release (Shopfully, 2022), it was specified how this operation aimed at accelerating ShopFully's growth of operations as well as reaching new customers and fostering the company's international expansion, as Stefano Portu remarked: *"Our mission is to connect more and more consumers in Europe and throughout the world with their local shops through our proprietary technology. Through the acquisition of Tiendeo, we accelerate our journey with the objective of creating even greater value for users and partners."* The concept of attracting new customers was stressed by Dean Vocisano, ShopFully's Country Manager for Australia, too. In addition, he explained the importance of the deal to acquire know-how useful *"to bolster our drive-to-store capabilities."*

A major breakthrough in ShopFully's establishment as a global leader in drive-to-store was represented by the merger with Media Central Group - in 2023 – a leading provider of data-based 360° drive-to-store marketing solutions that in turn owns, among many others, Offerista Group – specialized in digital retail marketing and drive-to-store solutions, now rebranded as ShopFully (Offerista, 2025) – and Yagora – specialized in shoppers' behavior analysis when making purchasing decisions based on well-founded data (Yagora, 2025) – mainly operating in Central/Northern Europe.

As reported in ShopFully's press release (ShopFully, 2023), the newly combined entity aimed at exploiting service complementarities of MEDIA Central, Offerista, Yagora, and

ShopFully *"to offer a comprehensive end-to-end suite of innovative drive-to-store marketing solutions for retailers and brands throughout Europe and internationally."* The international expansion and the integration between these two firms' complementarities as well as capabilities' acquisition represented relevant drivers in this operation, as Ingo Wienand, Group CEO of the MEDIA Central Group, stated: *"ShopFully complements MEDIA Central perfectly – both geographically with its leading market positioning in Southern Europe and internationally, and in terms of its highly scalable, AI-driven digital platform, which will help to further strengthen our ties with major retailers and brands."*

Stefano Portu, who became CEO Digital at the MEDIA Central Group, remarked on the shared view: *"The combination of these companies forms what we believe to be an undisputed leader in 360° drive-to-store marketing in a market with plenty of untapped potential throughout Europe and beyond."*

It is also interesting to underline how this operation united adjacent functionalities and core services. Namely, ShopFully's marketplaces and AI-powered marketing platform (HI!) with Media Central Group drive-to-store marketing solutions and its data-driven consumer behavior analysis solutions (provided by Agora). Most importantly, this merger enabled the combined entity to become the European leader in drive-to-store, thus suggesting the willingness – behind this deal – to consolidate the European drive-to-store industry.

From an organizational structure point of view, it is important to specify how Shopfully exists within the Media Central Group, but the operation has always been referred to as a merger, even in the Media Central Group's press release (Media Central Group, 2023).

In 2024, another Spanish marketplace was embedded into ShopFully's digital ecosystem, namely, Ofertia. This transaction – as extracted from a press release (ShopFully, 2024a) - has been instrumental in further expanding ShopFully's presence on an international scale and consolidating and increasing its market share as well as its customer base in Spain, Mexico, and Colombia, where Ofertia alone reached up to 4 million users looking for deals. It is legit to infer how this acquisition was also driven by another driver: competitor removal from the market, considering ShopFully and Ofertia's strong presences both in Spain and Latin America.

To conclude, it is interesting to report another merger happened in 2024: MEDIA Central Group (and ShopFully) and Flipp, a Canadian technology company and leader in digital merchandising that creates and distributes local promotions to shoppers, operating across Canada and the USA. A ShopFully's press release (2024b) reported the statements of the three companies' CEOs. First, Michael Silverman, CEO of Flipp, stated about this operation: *"This combination marks an exciting new chapter, enabling us to harness the combined power of Flipp and MEDIA Central to deliver cutting-edge drive-to-store solutions."* Second, Stefano Portu commented, *"Following the combination of MEDIA Central and ShopFully last year, this transaction presents a unique opportunity to form a global leader in drive-to-store marketing. Leveraging our unique, AI-powered marketing tech platform and investing jointly into product and technology will allow us to offer even greater value to our customers worldwide."* Third, Ingo Wienand, CEO Classic MEDIA Central, added, *"Together with Flipp, we are combining our strengths and expertise even more consistently to support retailers as a strong partner in the increasingly complex field of offer communication and to provide maximum value added."*

By analyzing these quotes, it can be concluded that global drive-to-store industry consolidation, products/services complementarities' achievement, knowledge sharing, and international expansion were the main factors behind the transaction. Nevertheless, other interesting extracts from the press release stressed how crucial in this deal was the idea to unite leadership and management of Flipp and MEDIA Central, *"creating unparalleled value for customers and shoppers."*

Additional insightful contributions stemmed from the private equity funds that are part of the new ownership structure: Truelink Capital and Bregal Unternehmerkapital. The former stated: *"The financial strength of the combined group will allow us to drive innovation and value for our high-quality customer base of international retailers and brands."* Likewise, the latter commented: *"The combination with Flipp is the logical next step for the group and will offer ample growth opportunities in the future."* These two final statements highlight how fundamental the financial driver was to conclude this merger.

As seen across the several case studies presented, ShopFully has been growing exponentially over the years. Through many acquisitions, it became the Italian leader in

drive-to-store, expanded its operation internationally, and finally became a dominant European player – after the merger with Media Central Group – and reached a global scale – after the merger of Media Central Group and Flipp.

The global digital ecosystem born after these extraordinary operations embraces services like management of digital flyers and catalogs, drive-to-store marketing campaigns, and marketplaces connecting retailers and brands with consumers. In addition, an AI-powered marketing platform (HI!) and capabilities in shopper behavior analysis and purchase decision tracking are integrated.

To sum up - according to the previously presented categorization – the motivations behind ShopFully's M&A activity are summarized as follows.

First, "market consolidation and expansion" represent the main driver, considering the great emphasis placed on the industry consolidation at a global level (through the mergers with Media Central Group and Flipp), international expansion (in Spain, Latin America, Northern Europe, and North America), and customer base expansion (without disregarding the market opportunity driver related to the Covid-19 positive trend for ShopFully's service, crucial in the acquisitions of the PromoQui and VolantinoFacile marketplaces). PromoQui S.p.A. and Ofertia's acquisitions also suggest a tension towards competitors' removal from the market.

The quotes analyzed (and the operations performed) remark on ShopFully's goal to become the Italian leader (first) and the European leader (later) in drive-to-store. This concept was additionally emphasized in Media Central Group and Flipp's ambitions to become the global leaders in drive-to-store. All these contributions underline the goal to consolidate the global drive-to-store industry.

Moreover, "product/service portfolio expansion" was another fundamental driver behind the M&A, especially present in the mergers, where product/service complementarities were achieved and adjacent functionalities/products/services were combined. To conclude, "financial and efficiency motivations" – as explained by the private equity firms that backed the merger with Flipp - and "capability and knowledge acquisition" drivers were significantly present, too.

Other M&A activities under analysis involve Nexi, the Italian paytech leader, which processes payments between banks, merchants, companies, consumers, and institutions. It also integrates merchant acquiring, POS devices, card issuing, digital wallets, e-

commerce solutions, fraud prevention, and other services (Nexi Group, 2025a). Thanks to its M&A activity – especially after the mergers with two European paytech players – it became a European leader in the paytech industry, under the name of Nexi Group. Nexi was born in 2017 from the merger between ICBPI (Istituto Centrale delle Banche Popolari Italiane) and CartaSi - which provided payment services, card issuing, merchant acquiring, POS devices, and so on – with the goal of creating a leader in the paytech industry. In the same year, the acquisition of the acquiring business units of Deutsche Bank and MPS (Monte dei Paschi di Siena), as well as the acquisition of Bassilichi – operating in the payment services value chain - and its subsidiaries, was completed (Nexi Group, 2025b).

The new entity Nexi did not start from scratch, as it was already a well-established player in the paytech industry.

The first relevant acquisition after Nexi's birth involved Intesa Sanpaolo's merchant acquiring division. According to several documents available on Nexi's website (Nexi Group, 2019), this operation aimed at consolidating Nexi's *"positioning in the world of the increasingly competitive merchant services"* while *"expanding the operational scale of merchant acquiring activities."* The information available primarily stresses the importance of strengthening the position in a crucial sector (merchant acquiring service) for the overall value chain. In addition, it emerges how reaching new customers was a relevant driver in this transaction. Nevertheless, great emphasis was placed on the financial benefits stemming from the deal, as concepts like "revenue diversification increase" and "cash EPS accretion" were underscored.

In 2020 Nexi and Nets – another paytech leader, mainly operating across Central, Eastern and Northern Europe - signed the merger agreement (Nexi Group, 2025b). According to Nexi's press release (Nexi Group, 2021), *"the combined Group will be a leading European PayTech with unique capabilities, distribution network, breadth of offering and with an overall addressable market expanded 4x compared to Nexi standalone."* And yet, *"consolidation of the Group strengthens prospects through an expanded and diversified geographic reach, broader product and services portfolio, enhanced exposure to e-commerce and lower customer concentration."* Paolo Bertoluzzi, Nexi's CEO, added: *"This is a key milestone on our journey to create a leading European PayTech with enhanced scale, reach and capabilities. […] Together, leveraging a strong*

complementary presence across both the most digitally advanced and underpenetrated geographies in Europe, we want to shape the way people pay and businesses accept payments, by offering the most innovative and reliable solutions. […] This powerful strategic combination will allow us to create the largest pan-European platform with the scale to drive superior products and efficiency leadership."

Many factors leading to this merger are present in these statements, and all of them seemed extremely relevant in this deal origination. By analyzing them, the main drivers are represented by industry consolidation (the combined entity aimed at becoming a large European paytech player) and international expansion (as both Nexi and Nets operated across complementary regions of Europe), considering the ambition to create the European leader in the paytech industry, as both players were well-established in the market. In addition, a strong focus was posed on the complementarities between Nexi and Nets. Notably, Nets was very vertical in providing e-commerce solutions and Nexi in merchant acquiring and card issuing. More in general, this operation enabled the expansion of the products/services portfolio. Further emphasis lay on the integration between the two firms' knowledge and capabilities. However, it is insightful to focus the lens on another driver: the identification of a market opportunity. As stressed in the press release, the combined group wanted to catch *"favourable industry dynamics such as the accelerated shift towards digital payments across Europe and increased demand for a full-service payment provider."* Lastly, the expression *"an overall addressable market expanded 4x compared to Nexi standalone"* suggests the willingness to accelerate the growth in the scope of operations.

After this massive merger, Nexi Group did not stop growing, yet, in 2022, SIA (Società Interbancaria per l'Automazione) - an Italian provider of mission-critical payment technology and infrastructure services, mainly operating across Central and Southern Europe - joined Nexi and Nets. According to some documents available on Nexi Group's website (Nexi Group, 2020), the overall aim of the merger was to create *"a fully integrated European paytech leader"*; thus, the primary purpose was to further consolidate the European paytech industry, thanks to the combination of three large players (Nexi, Nets, and SIA).

Secondly, a crucial rationale behind this operation was the vertical value chain integration: SIA provided network and connectivity services for banks and financial

institutions - to access key EU payments infrastructures and innovative blockchain-based solutions - as well as primary market services, trading, and post-trading for capital market operators. Moreover, by combining Nexi and Nets with SIA's operations across Central and Southern Europe, the international expansion of the combined group was further enhanced.

Third, the customer base was widely expanded: many banks were added, but most importantly, Central Institutions and Public Administration were integrated into Nexi's customer base. Moreover, another strategic rationale that must be highlighted is the addition of new services/products as well as complementarities between products/services. Through the transaction, the portfolio of offerings strengthened and broadened, covering services and solutions for merchants – such as SME solutions, e-commerce payments, large merchants' omni-channel solutions – cards and digital payments solutions – like consumer cards, national debit cards, commercial cards, and mobile payment apps – and digital banking and corporate solutions – such as solutions for public administrations and central institutions, open banking, instant payment solutions, and network services for banks as well as clearing and trading services.

It is important to underscore how new capabilities were integrated within the combined group: SIA brought its leadership in the processing of national and international payments, debit card issuing, and account-to-account solutions. Furthermore, the analyzed documents (Nexi Group, 2020) posed great emphasis on cost synergies, revenue synergies and capex synergies – involving tech platforms optimization, cross-selling and up-selling of current and next generation solutions to international and national clients, integrated proposition for corporates, public administrations and other institutions, optimization of investments in overlapping applications and new product/platform development – as well as profitability enhancement and acceleration of growth in the scope of operations, explained under the concepts of "superior profitability and cash generation at scale" and "best position to capture multiple growth avenues, organic and inorganic."

In the following years, Nexi Group acquired the merchant acquiring business of the Croatian PBZ Bank (Nexi Group, 2022) and the merchant acquiring business of the Spanish bank Sabadell (Nexi Group, 2023) to strengthen its value chain integration and expand the group's international expansion.

To sum up - according to the categorization devised - the main driver behind Nexi's growth through M&A was "market consolidation and expansion": the two massive mergers aimed at consolidating the European paytech industry and expanding the operations across Europe – especially the one with Nets. And yet, the willingness to acquire more and more customers - new merchants, new banks, public institutions - was stressed throughout the analysis. Market opportunity identification represented another insightful factor behind this M&A activity, as Nexi Group wanted to catch *"favourable industry dynamics such as the accelerated shift towards digital payments across Europe and increased demand for a full-service payment provider."*

As fundamental as the first category is "product/service portfolio expansion." As emerged from the previous considerations, Nets brought leadership in e-commerce solutions and SIA in instant payments and debit card solutions. Broadly speaking, Nexi Group's portfolio of products and services now covers 360° of the solutions prompted by merchants, corporate clients, banks, and public institutions. Lastly, the value chain integrations were recurring themes: Nexi put a lot of energy into acquiring merchant acquiring businesses, but, more importantly, SIA's merger made it possible to embed, into Nexi's digital ecosystem, network and connectivity services for banks and financial institutions and primary market services for capital market operators. Furthermore, financial and efficiency rationales – including EPS accretion, revenue diversification, revenue synergies, cost synergies, and acceleration in operations growth - were broadly highlighted in both mergers' considerations. Knowledge sharing was strictly related to the mergers with Nets and SIA, which brought capabilities and skills in the services they were vertical.

To conclude, it is interesting to clarify how this merger raised concerns on the part of the Italian Competition Authority (AGCM). According to it (Italian Competition Authority, 2021), the concentration was *"likely to lead to the creation or strengthening of the dominant position of the post-merger entity in the domestic card processing markets of the ATM circuit and of the clearing services of non-SEPA products,"* thus certain national-level markets were subject to local dominance risks. Consequently, in authorizing the transaction, some behavioral and structural remedies were imposed to ensure that potential new entrants could compete effectively, and discrimination would be prevented.

And yet, other obstacles to the completion of the deal between Nexi, Nets, and SIA – as Efficio, the consulting firm that followed the operation, stated - were structural and cultural integration (Efficio, 2022). All three companies had existing procurement departments, but they all had different responsibilities within the organization and different ways of working. Hence, Efficio supported the new procurement department – made up of people from the three companies - *"in building a community of stakeholders that could work together effectively and deliver results."*

The qualitative research continues with the investigation into the M&A activity of another European digital ecosystem: Vinted, a Lithuanian second-hand fashion app - it also enables the sale of electronic devices, home devices, entertainment products, and sports goods - which connects sellers and buyers in one place (Vinted, 2025). Founded in 2008, thanks to its relationships with payment providers, logistics partners, buyers, sellers, and luxury verifiers, over the years, it established a digital ecosystem that mainly operates in Europe (with a presence in the United States), consolidated through the acquisitions of rival startups and delivery firms.

In 2019, Vinted acquired the Spanish competitor Chicfy. According to an article of FashionNetwork (2019a), once Vinted landed on the Spanish market, Chicfy could not compete properly – due to Vinted's lower commissions and significant marketing investments – and thus started to look for a buyer. This represented a market opportunity for Vinted, as the CEO Thomas Plantenga explained: *"We love the Chicfy community and when we heard that the company was going to shut down its platform, we thought we should offer its members a practical alternative and give them the opportunity to benefit from Vinted's attractive offer for buyers and sellers."* Through this market opportunity, Vinted both expanded its presence in the Spanish market – in alignment with the strategy explained in an interview to FashionNetwork (2019b) – and removed a competitor that had a strong presence in that country.

In 2020, another acquisition of a rival startup occurred. Indeed, Vinted bought United Wardrobe, the largest second-hand fashion platform in the Netherlands at the time, which also operated across Belgium, France, and Germany. As reported by Drake Star Partners (2020) – the consulting firm that supported United Wardrobe in the transaction – the acquisition enabled Vinted to expand further internationally and broaden its customer base in the countries where the Dutch platform operated, *"with a combined member base*

of 34 million buyers and sellers." The concept of customer base expansion as a driver behind this acquisition was also stressed by Thomas Pablenga, CEO of Vinted: *"[…] The Netherlands boasts a strong and active community of second-hand fashion lovers – and we're thrilled to be able to strengthen our presence in this market."* Moreover, the CEO underlined the importance of shared culture and mission with United Wardrobe*: "[…] We share the same ethos and mission: to make second-hand fashion the first choice worldwide."* In addition, Sjuul Berden, CEO of United Wardrobe, strongly supported this view: *"Joining together with Vinted will enable us to make the most of this opportunity and, together, help accelerate the global movement towards a more sustainable fashion industry."* Furthermore, Thomas Pablenga expressed how the deal was supported by an additional rationale: the pursuit of an accelerated growth in the scope of operations, exploiting efficiencies by combining the two businesses*: "Together, Vinted and United Wardrobe can scale faster – doubling our rate of expansion to new markets – and deliver a truly unique product to our community of members across Europe."* Considering United Wardrobe's leading position in the second-hand industry in the Netherlands, it is legit to infer that Vinted also aimed at eliminating this competitor from the market.

Vinted's M&A activity continued in 2022, when it acquired Rebelle, a German startup operating an online marketplace for selling and buying premium second-hand fashion items and accessories spread Europe-wide. According to Adam Jay, Vinted's marketplace CEO (Vinted, 2024a), the main driver behind this operation was the integration within Vinted's offering of luxury second-hand products, followed by the logical customer base acquisition: *"Migrating Rebelle users to Vinted is a super logical next step for both companies and for our combined community. Vinted will now be able to offer a wider range of items and price points through a single combined platform. This is also an important milestone as we enhance the high-value fashion offering on Vinted, building on the successful launch of Vinted's Item Verification service in 2023. We are proud of our progress, which has been hugely accelerated by combining with Rebelle."* Considering Rebelle's trusted verification process and Vinted's item verification service launched in 2023 (Fashion Network, 2023), it is logical to infer how Rebelle's capabilities helped Vinted to enhance the value of services and products offered. Therefore, the rationale behind this deal also lies in the acquisition of non-existing knowledge and capabilities, as stated in the press release: *"The Rebelle team significantly contributed to*

the growth of Vinted Marketplace and will continue to play a pivotal role in driving scale and innovation around high-value fashion at Vinted." And yet, Rebelle's managerial expertise was transferred into Vinted, since the founders hold leadership roles: Cecile Wickmann drives the business strategy for high-value fashion items at Vinted, while Max Schönemann continues to work closely with the former Rebelle verification team as senior director authentication & fulfillment operations at Vinted Go.

In 2023, Vinted – through its subsidiary Vinted Go, active in the shipping market - further widened its digital ecosystem through the acquisition of Homerr, a Dutch delivery company that operated across the Netherlands, Belgium, and Luxembourg with a network of social and commercial pick-up and drop-off (PUDO) points. First and foremost, the logical motivation behind this transaction was the integration, within Vinted's value chain, of the delivery service (at least in some countries). In addition – as emerged from a press release (Vinted, 2023) - the operation was driven by the acquisition of Homerr's expertise in the service provided and a shared view about the provision of a climate-friendly service: *"As a pioneer in a new way to deliver parcels, Homerr shares our commitment to develop improved PUDO delivery networks which have a lower impact on the climate than in-home delivery. […] During this time, we have been impressed with both their innovative offering and their passionate approach towards continuous improvement. We're excited for a shared future in which we're able to deepen the expertise and reach of both businesses to the benefit of Vinted members."*

In the following year, Vinted acquired Trendsales, Denmark's largest second-hand marketplace for fashion and lifestyle items. According to an article on Vinted's website (2024b), the main drivers behind this operation were Trendsales' customer base and knowledge acquisition as well as operational synergies achievement: *"The Danish appetite for second-hand clothing continues to grow, and Trendsales has played a significant role in that development. With impressive growth and a compelling vision, Trendsales is a company that has established a strong second-hand community in Denmark that we are excited to become part of."* And yet *"by combining Vinted's scale and expertise with Trendsales' regional knowledge and strong Danish presence, the combined business can achieve significant synergies and new opportunities to benefit Danish consumers."*

These statements may hide another relevant M&A driver: competition removal. In fact, Vinted started operating in Denmark in 2023 (Vinted, 2024c); thus, it did not have such a large customer base, considering Trendsales' dominant position. Therefore, this acquisition can be primarily seen as a move to get a competitor's market share.

To summarize, the first broad driver which pushed Vinted's M&A activity was "market consolidation and expansion", better explained under the sub-drivers competition removal and customer base expansion. This was predominantly seen in the acquisitions of Chicfy, United Wardrobe, and Trendsales. The international expansion goal was present but seemed to be less relevant than the other two.

Right after, "product/service portfolio expansion" represented another crucial motivation behind the M&A activity. Notably, Rebelle and Homerr's operations were driven by the addition of new products (luxury apparel and accessories) and value chain integration (PUDO delivery network expansion).

At the same level of importance, it is noted how "capability and knowledge acquisition" was fundamental in Homerr, United Wardrobe, and Trendsales acquisitions. However, this driver was a crucial rationale behind Rebelle's deal: the German startup brought top-notch expertise into the premium second-hand fashion market.

Another driver recurring throughout the analysis was "shared culture and values". United Wardrobe and Trendsales, supported by their communities, showed a clear vision and mission towards sustainable fashion as well as Homerr's commitment to provide climate-friendly, low-cost shipping solutions.

Lastly, and less relevant, were the "financial and efficiency motivations", explicitly mentioned only in United Wardrobe's transaction.

The analysis of M&A activities performed by Europe-born digital ecosystems now shifts the focus on Delivery Hero, a global multicategory delivery company, born in Germany in 2011. It connects customers, restaurants, local shops, grocery stores, partners, and riders and provides a wide range of services such as food delivery, grocery delivery, Q-commerce solutions, AdTech solutions (for restaurants, grocery stores, and local shops), and payment processing on the apps (Delivery Hero, 2025a; Delivery Hero, 2022). Thanks to dozens of M&A operations, this global network grew over the years and reached a global scale. Considering this hectic activity, not all the operations will be presented or delved into, thus focusing on the most important ones. Moreover, those

businesses that have been acquired and then sold will not be taken into account (for example, Hungryhouse UK, Lieferheld).

The analysis of the transactions performed by Delivery Hero starts with OnlinePizza Norden's acquisition in 2012. According to a press release (Delivery Hero, 2012), *"OnlinePizza Norden built the market-leading platforms in Sweden, Finland, Austria and Poland",* and specifically it owned OnlinePizza and Mat24 in Sweden, PizzaOnline in Finland, PizzaPortal in Poland, and Mjam and WillEssen in Austria (then rebranded over the years). The clear-cut strategy was to expand the operations in new countries and broaden the customer base. Additionally, Fabian Siegel, Delivery Hero's ex-co-CEO, underlined the financial driver behind this deal: *"[…] The team behind OnlinePizza built a very profitable business that we plan on growing further over the coming years."*

In 2014, the Latin American player PedidosYa was acquired. As stated in a press release (Delivery Hero, 2014a), this player was the market leader for online food ordering in Latin America, a region Delivery Hero was not present in yet at the time. Therefore, this deal aimed at expanding into a new geographical area and consequently acquiring new customers. In addition, this operation was also driven by a market opportunity identification: *"[…] Delivery Hero sees a very attractive growth opportunity in the Latin American markets. The success of the PedidosYa App with more than two million downloads shows the enormous potential for new technologies in this region."*

After the international expansion in the Latin American food delivery industry, Delivery Hero's strategy was to consolidate its market presence in a region full of growth opportunities, as the CEO Niklas Östberg remarked: *"Latin America holds a central role in our long-term strategy. With these acquisitions we further extend our leading position in a region with tremendous growth."* As a consequence, in the same year (2014), it acquired foodpanda's businesses in Argentina, Chile, Colombia, Ecuador, and Peru (Delivery Hero, 2014b), thus reducing competition, too.

In 2015, Delivery Hero carried out several operations.

First, it acquired Damejidlo and Jidloted in the Czech Republic and Slovakia to access new European markets and strengthen its market leadership in continental Europe (Delivery Hero, 2015a).

Second, it acquired Talabat - the regional market leader in the Middle East, operating across Kuwait, Saudi Arabia, UAE, Bahrain, Oman, and Qatar - to expand its presence in

this region. Furthermore, a market opportunity was identified into this deal, as the CEO commented: *"The Middle East was always a missing piece to our global vision. Talabat built a fantastic business over the last years, making the most orders in the region. We will be instantly in a leading position in a region with tremendous growth potential."* (Delivery Hero, 2015b).

Third, the international expansion of Delivery Hero continued with the acquisition of the Turkish player in the food delivery industry Yemeksepeti *"in a transaction valued at US$589 million."* As Yemeksepeti was also active in the Middle East, Delivery Hero believed this operation was instrumental to exploit synergies with Talabat and consolidate market presence in that geographical area. Moreover - as CEO Niklas Östberg stated – Yemeksepeti reported exceptional performances as of "*customer cohorts and reorder rates"*, suggesting a strong efficiency rationale behind the acquisition as well. In addition, the CEO stressed how fundamental was to acquire new managerial and operational skills/capabilities: *"[…] Nevzat [CEO of Yemeksepeti] will not only continue to lead Yemeksepeti, but will also strengthen our team with his invaluable expertise and experience […]"* (Delivery hero, 2015b). The same press release introduced Delivery Hero's acquisition of the Greek market leader e-Food.gr.

One of the most relevant acquisitions occurred in 2016, when a global player in the food delivery industry was embedded into the digital ecosystem: foodpanda. The fundamental strategic driver was foodpanda's coverage across regions Delivery Hero did not reach, as stated in the press release (Delivery Hero, 2016): *"foodpanda will add 20 new countries in Eastern Europe, MENA [Middle East and North Africa] and Asia to Delivery Hero's platform increasing the size of Delivery Hero's total addressable market."* In addition, another strategic motivation related to Delivery Hero's consolidation of its market leadership position in the Middle East, where foodpanda operated, too. Moreover, the CEO Niklas Östberg stressed the importance of acquiring know-how and managerial capabilities: *"[…] We look forward to working with the team to continue creating unparalleled takeaway experiences for our customers around the world."* The willingness to remove a competitor from the market seems to be a marginal reason behind the operation, as it is logical to believe that Delivery Hero primarily aimed at expanding in the countries foodpanda dominated.

Since its foundation, Delivery Hero has slightly varied its business model. The company started as a marketplace, connecting customers with restaurants, which then delivered the orders themselves. As customers' preferences changed over the years, the business transformed, and then the company started delivering orders by its own fleet of riders, besides continuing to operate as it used to do originally. Urban Taste represented the brand under which Delivery Hero delivered food using its own logistics, but it was an experiment implemented in Germany only (Delivery Hero, 2015c).

Therefore, to quickly improve this new service, in 2015, Delivery Hero acquired foodora, a German company - operating across Germany, France, Spain, Italy, Finland, Sweden, the Netherlands, Norway, Austria, Dubai, and Hong Kong - that offered delivery from quality restaurants by managing its own logistics network (Delivery Hero, 2015d). This deal was predominantly aimed at integrating Delivery Hero's value chain and exploiting foodora's global position to offer this new service in many countries outside Germany.

Strictly related to this change in the business model was also the acquisition of Carriage, a young and fast-growing food delivery platform based in Kuwait - operating in Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE) – which had the hybrid business model Delivery Hero started implementing. Carriage – through its own delivery service – made it possible to reach new customers, namely restaurants that did not deliver themselves. Therefore, the deal enabled Delivery Hero to add new customers and integrate its value chain as well as acquire Carriage's managerial and innovational skills, as Niklas Östberg said: *"Carriage is an innovative player in the Middle Eastern food delivery market with an excellent management team. It will be a perfect addition to our current offering under the Talabat brand and strengthen our foothold in this region, where we see significant growth potential"* (Delivery Hero, 2017). On the other hand – considering Carriage's innovative and effective business model - this operation can also be read as an action to remove a disruptive competitor in the Middle East market.

In 2018, the acquisition of hipMenu - an online food delivery marketplace in Romania – made it possible to enter a new geographical market and integrate *"a strong management team",* while the acquisition of iFood's online food delivery operations in Argentina enabled Delivery Hero to strengthen its leadership position in that market (Delivery Hero, 2018), but also to dismiss a competitor in Argentina.

In 2019, to further enhance its value chain integration and consolidate the UAE market, Delivery Hero acquired Zomato's food delivery business (Delivery Hero, 2019).

This year registered another breakthrough in Delivery Hero's growth. The firm started to deliver grocery products or household essentials – from its delivery-only supermarkets or local retailers - leveraging the potential of Q-commerce solutions (Delivery Hero, 2025b).

In this sense, the acquisition of InstaShop - one of the largest online grocery platforms in the Middle East and North Africa – occurred in 2020. As Niklas Östberg stated, *"The InstaShop team embodies our values and brings a strong vision and capabilities. As a leading player in the grocery segment, InstaShop has built a service customers love, and their expertise is a great addition to our quick commerce expansion"* (Delivery Hero, 2020a). This quote suggests that a main rationale behind this operation was the acquisition of expertise in grocery delivery and of managerial skills. Overall, InstaShop was primarily bought to add this new service to Delivery Hero's portfolio in the Middle East and North Africa.

In 2021, Delivery Hero consolidated its market position in Denmark through the acquisition of the competitor Hungry. Additionally, as Delivery Hero stressed (Delivery Hero, 2021a), the transaction empowered the company's expertise and leadership skills.

Another pivotal deal for Delivery Hero's expansion involved the acquisition of Glovo's majority stakes. Glovo is a multi-category app connecting users with businesses and riders, offering on-demand services from local restaurants, groceries and supermarkets, pharmacies, and high street retail stores.

Delivery Hero started investing in Glovo in 2018. In 2020, it acquired Glovo's full operations in Latin America, aiming at adding new countries covered by its offering and strengthening its market presence in Argentina, Panama, and the Dominican Republic. As the CEO said, other drivers were the willingness to exploit a growing market potential, the acquisition of know-how to drive innovation, and the expansion of the scope of operations: *"Latin America is a region with exceptional growth potential for online delivery. Acquiring Glovo's local operations gives us the opportunity to double down on our efforts to drive innovation, continuously improve customer experience and support local vendors in the region"* (Delivery Hero, 2020b).

As mentioned above, in 2022, the (almost) full acquisition was completed, with the purpose of consolidating the presence in the geographical areas Glovo dominated

(Europe, Central Asia, and Africa), reaching services/products complementarity – thanks to Glovo's multi-category service offering and its delivery model – and improving the overall profitability – thanks to Glovo's exceptional performances – (Delivery Hero, 2021b). Additional drivers behind this deal were know-how and managerial capabilities' acquisition, as Niklas Östberg underlined: *"The Delivery Hero team has admired and supported Glovo for many years. They have been frontrunners in the industry by offering a multi-vertical service from the start. Their product focus and fast execution have given them a leading position in 16 out of 25 markets, despite having launched a number of years later than their peers."* Moreover, a shared passion for multi-category delivery and quick commerce as well as a shared vision for the industry were highlighted as important factors (Delivery Hero, 2021b). However, this acquisition can also be seen as a strategic move to remove a competitor from the European, Latin American, and African markets. After the transaction, Glovo's brand and management team have been kept.

Lastly, in 2025, making the most out of a market opportunity – a competitor exit from a geographical market – Delivery Hero acquired Deliveroo's business in Hong Kong, with the aim of consolidating its market presence and expanding its customer base (some restaurants and grocery stores were not available on foodpanda's app) (Delivery Hero, 2025c).

Now, it is the moment to summarize the results obtained from the analysis of Delivery Hero's M&A activity.

The main category detected was "market consolidation and expansion", by far. The international expansion was a recurring theme throughout the analysis: most firm's acquisitions aimed at addressing new countries and geographies (for example, the Nordics, Latin America, the Middle East, North Africa, and some Asian countries) and consequently getting new customers. Additionally, many acquisitions were also driven by the willingness to consolidate the industry in some geographical areas and to remove competitors from the market. In this sense, foodpanda, iFood (Argentinian business only), Carriage (especially for its innovative way of delivery), Glovo, Deliveroo HK, and Hungry are examples of this strategy application. The acquisitions occurred in the Latina America – and the one of Deliveroo HK – demonstrated Delivery Hero's tension towards market opportunities' exploitation.

The second category which drove the M&A activity was “product/service portfolio expansion.” Notably, by acquiring foodora and Carriage, Delivery Hero started integrating its value chain through the implementation of a proprietary logistics network in the countries wherein the other two firms operated. InstaShop’s transaction enabled Delivery Hero to broaden its offering in the Middle East and North Africa by integrating grocery delivery service. And yet, Glovo’s majority stakes purchase made it possible to reach service complementarity, considering Glovo’s quality of offering.

“Capability and knowledge acquisition” was repeatedly stressed as another relevant factor behind the operations. The purpose to acquire know-how and managerial skills - in the food delivery market - was spread throughout Yemeksepeti, foodpanda, hipMenu, Carriage, InstaShop, and Glovo deals. “Financial and efficiency motivations” were more marginal than the others, but they have been highlighted when talking about OnlinePizza Norden, Yemeksepeti, and Glovo, which stood out for their profitability performances.

6. CONCLUSIONS

6.1. Summary of findings

This qualitative study has investigated the strategic motivations behind M&A activities across a diverse group of European-born digital platforms and ecosystems. Namely, Testbusters, LimoLane, ShopFully, Nexi, Vinted, and Delivery Hero. Despite the heterogeneous nature of their scales, maturity levels, and industries – spanning from education and premium mobility to drive-to-store, payments, second-hand fashion, and multicategory food and goods delivery – the analysis revealed, with due proportions - both common patterns and marked differences in their strategic rationales driving extraordinary operations.

Testbusters' M&A activity was primarily driven by product/service range expansion (new test verticals), product/service complementarity achievement (mentioned in its peer-learning model combined with UniAdmissions' digital ecosystem), and adjacent functionalities addition (Ammesso.it simulations). In addition, Testbusters repeatedly sought non-existing capabilities acquisition (like specialized content and community know-how). International expansion appears as a by-product of UniAdmissions acquisition, which provided preparation courses for admission to Cambridge and Oxford. Customer base expansion was mainly targeted at unserved niches (Bocconi preparation). Shared values and culture represented relevant drivers, as Testbusters' mission has always been to provide a high-end product for students (for example, TopSquad was a player Testbusters was fully aligned with).

LimoLane's M&A operations were primarily aimed at international expansion (in Asia, the USA, and the UK, as its founder Fabio Nalucci anticipated), customer base expansion – into mobility for leisure and private events - and industry consolidation in Italy; competition removal seemed to be opportunistic and not a determinant driver. Great emphasis was posed on financial and efficiency factors, explained under the concepts of "buy and build" and acceleration of growth in highly competitive environments (USA and UK). Service portfolio expansion was present – addition of solutions for private events and leisure travelers – but less significant than the other drivers.

As regards ShopFully, the mergers with Media Central Group and Flipp highlighted the willingness to consolidate the drive-to-store industry, first at a European level and then globally. These operations were secondarily driven by international expansion, which was

fundamental in the Ofertia and Tiendeo acquisitions as well. Moreover, ShopFully showed interest in removing competitors like PromoQui S.p.A. and Ofertia from their respective markets. Fundamental drivers – especially in the mergers - were also the opportunity to provide a wide range of complementary solutions in drive-to-store (spanning from digital marketplaces to digital marketing), combined with a range of adjacent services and functionalities which empowered the core offerings. The mergers were performed to integrate diverse knowledge, including AI/analytics capabilities, digital marketing know-how, and regional market knowledge (Italy and Southern Europe, Latin America, Central and Northern Europe, North America), and so on. Additionally, the new combined group creation was driven by the possibility to establish a financially strong player in drive-to-store globally, as the private equity funds that backed the deals remarked.

By analyzing Nexi's transactions, European paytech industry consolidation – made possible by the mergers with Nets and SIA – emerged as the most significant driver. Secondary were international expansion across Europe and customer base expansion, especially to public institutions. Central importance was given to product/service portfolio expansion and value chain integration: Nets added e-commerce and digital gateways; SIA contributed instant payments and debit card solutions. The acquisitions of several merchant acquiring businesses were meant to strengthen the value chain integration as well as SIA's deal, which brought interbank connectivity and capital-markets infrastructure. The opportunity to catch positive industry dynamics (European shift towards digital payments) reinforced Nexi's decisions to pursue M&A. Still relevant were financial and efficiency motivations, made explicit and quantified (EPS accretion, revenue, cost and capex synergies, and operations exponential growth).

In its M&A activities, Vinted prioritized competition removal - Chicfy, United Wardrobe, and Trendsales were well-positioned rivals - and the customer base expansion in those countries where established communities were present. Great emphasis lay on broadening the products offered – notably, by including luxury apparel and accessories, provided by the acquired Rebelle – and empowering value chain integration, particularly in the shipping market. Capability and knowledge acquisition were recurring themes (luxury authentication expertise, regional expertise), as well as shared culture - oriented towards sustainable fashion - that mattered when choosing target firms.

As of Delivery Hero, this is the clearest example of a strategy aimed at international expansion and market consolidation (partly achieved via acquisitions of competitors): rapid entries into new geographical areas (the Nordics, Latin America, the Middle East, North Africa, Europe, and partly Asia) and industry consolidation through competition removal (for instance, foodpanda, iFood (Argentinian business only), Zomato UAE, Glovo, Deliveroo HK, and Hungry). Market opportunities were exploited where exits or growth opportunities arose. Value chain integration was achieved thanks to deals involving companies that owned a proprietary logistics network, while the addition of grocery goods delivery solutions in some geographics was favored by the acquisition of other firms that provided that service. In addition, the overall service was enhanced after the Glovo transaction, which brought complementarities in multicategory solutions. Capability and knowledge acquisition were systematic, retaining founders/teams to transfer know-how. Financial and efficiency motivations were more marginal than the others but appeared in references to some targets' profitability.

In sum, both common and different rationales – and the related nuances stemming from the actors' distinctions - driving M&A activity emerged from the study.

International expansion stood out as a consistent theme in almost all cases, though with different weights: for Delivery Hero and ShopFully it was crucial, for Nexi it followed the European consolidation rationale, for LimoLane it was fundamental as well, while for Vinted and Testbusters it was more of a consequence than a strategic priority. Customer base expansion was also present in all cases, whether through the acquisitions of communities (Vinted), merchants, banks, and public institutions (Nexi), private and leisure mobility clients (LimoLane), student populations in new niches (Testbusters), or, more in general, new clients worldwide (ShopFully and Delivery Hero).

Industry consolidation represented another significant driver, though with several facets: LimoLane aimed at consolidating the Italian premium mobility market, while ShopFully, Nexi, and Delivery Hero pursued broader consolidation strategies at continental or even global levels.

Competition removal was sometimes registered as a main rationale with respect to Vinted and Delivery Hero, while it was secondary for the other players.

Market opportunity was sometimes mentioned by the players investigated as an additional driver behind their deals.

Another common pathway was product/service portfolio expansion. Every player leveraged acquisitions to broaden offerings and achieve complementarities, though the scope varied. Testbusters added adjacent functionalities and new course verticals; LimoLane expanded into leisure and private event mobility; ShopFully integrated new marketplaces, digital marketing solutions, and analytical tools; Nexi embedded new services such as instant payments and debit cards and complemented e-commerce solutions; Vinted added luxury goods; and Delivery Hero widened its scope into grocery food and multi-category products.

In addition, Nexi strengthened its value chain through the integration of merchant acquiring businesses and technological infrastructures for banks and capital markets; Delivery Hero expanded into logistics networks and q-commerce, while Vinted acquired a player to empower its shipping service.

A further recurring theme was capability and knowledge acquisition. Testbusters sought expertise and know-how it lacked internally, often tied to founders who remained post-deal. ShopFully targeted capabilities in AI and digital marketing, but also regional market knowledge; Nexi in e-commerce, instant payments, and payments infrastructure; Vinted in logistics, luxury products, and regional market knowledge; Delivery Hero in logistics, multicategory products, and regional market knowledge. Furthermore, some of the players under analysis looked for managerial skill to be brought onboard.

Financial and efficiency motivations appeared across the research but differed in salience. For Nexi and ShopFully, these were central and explicitly quantified (EPS accretion, revenue and cost synergies, and overall group's financial strength). For LimoLane, they underpinned a "buy-and-build" strategy to grow valuation. By contrast, for Vinted and Delivery Hero, these factors were present but secondary to the other drivers. Finally, shared culture and values represented marginal motivations. They have been stressed in TestBusters (commitment to provide high-end product/service for students) and Vinted operations (acquiring firms who shared the view of sustainable fashion).

To conclude, further considerations are important. Testbusters represents a small edtech platform - which is trying to build its own ecosystem – and its M&A motivations revolve around product/service expansion, knowledge acquisition, and culture/values alignment. Scale and financial synergies play a marginal role, while cultural fit and specialized content are determinant.

LimoLane is positioned in the fragmented premium mobility industry, where market consolidation, international expansion, and financial motives dominate. Portfolio expansion is deemed to be a complement to the core offering.

ShopFully is a perfect example of ecosystem building in drive-to-store: it combines European and global industry consolidation with product/service complementarity, bringing together marketplaces, AI, digital marketing solutions, and analytics into an integrated offering. Here, both capabilities and financial strength were central. Interesting to highlight was how ShopFully exploited the positive trend – drive-to-store potential – during the Covid-19 pandemic.

Nexi highlights how M&A works in infrastructure-heavy, regulated industries. Value chain integration, service/portfolio expansion at 360°, and industry consolidation are paramount (Nexi's purpose was to create the European paytech leader), along with customer base diversification into merchants, banks, and public institutions. Its transactions were the most explicitly tied to quantified synergies and financial metrics, and, less importantly, to acquire specific knowledge. Additionally, Nexi caught market opportunities related to the digital payments shift in Europe, too.

Vinted prioritized competition removal and customer base expansion to strengthen its spread. Portfolio expansion and value chain integration were more targeted, adding luxury and logistics. Shared culture - sustainable fashion - played a strong role here as well as the need to acquire market- and product-specific skills.

Delivery Hero pursued the broadest geographic scope, making international expansion and market consolidation its defining rationale. It integrated vertically into logistics and diversified into q-commerce, while also removing competitors systematically. Compared to Nexi or ShopFully, financial motives were less underscored, but efficiency gains were sometimes present. Once again, market opportunities in Latin America and Hong Kong were relevant in Delivery Hero's strategic expansion.

In conclusion, the common pathways are centered around international expansion, industry consolidation, customer base expansion, portfolio broadening, and capability acquisition, while the differences in industries involved reveal market-specific motivations, such as a push towards financial motivations, cultural fit, competition removal, 360° portfolio creation, value chain integration, large-scale consolidation, synergies, and global reach.

6.2. Theoretical contributions and managerial implications

This study contributes to the theoretical debate on digital platforms, ecosystems, and M&A strategies in several ways.

First, it broadens the scope of M&A scholarship beyond Big Tech firms, which have mostly been the center of discussion of existing literature and regulatory authorities. By shifting the empirical lens to European-born digital players, this research aims at investigating the strategic rationales guiding their M&A activity, thus integrating research that predominantly studied larger tech actors.

Second, the categorization devised offers a conceptual framework through which to compare heterogeneous cases, even across different industries. Clusters that have been detected – "market consolidation and expansion", "product/service portfolio expansion", "capability and knowledge acquisition", "shared culture and values", and "financial and efficiency motivations" – and the sub-drivers under each cluster may be useful tools to make comparisons between M&A strategies applied by digital ecosystems operating in different markets. In this way, common pathways can arise as well as distinctions. While some recurring sub-drivers are present throughout the cases tackled, distinctions are evident too, depending on the industry. Some digital ecosystems mainly try to consolidate at a global level, others at a regional or national level. And yet, some can primarily pursue product/service complementarities, and others new product/service additions. Moreover, there are digital ecosystems that heavily rely on financial motivations, while others rely on cultural fit. Therefore, the categories used in this research allow comparisons and may be useful to get industry-specific nuances behind strategic rationales driving M&A operations of digital ecosystems.

Third, the findings show how European digital players use M&A not only to scale but also to build ecosystems – both small and well-established ones – of interconnected products/services and actors. This enriches existing literature, demonstrating again how extraordinary operations serve to create complementarities, acquire non-existing capabilities, stifle competition, consolidate industry (both on a national, regional, and international scale), expand portfolio offerings, boost financial performance, and so on.

Fourth, by shifting the lens from tech giants' ecosystems, this research underscores that there are European-born players – for example, Nexi, ShopFully, and Delivery Hero – that significantly grew their ecosystems over the years and extremely consolidated their

power in the respective markets. Hence, this may bring – in the future years – negative effects for competition and consumers.

6.3. Limitations and further developments

However, this qualitative research presents some limitations that need to be acknowledged to pave the way for future studies.

First, the investigation focused on a selected group of European-born digital ecosystems – Testbusters, LimoLane, ShopFully, Nexi, Vinted, and Delivery Hero – which are different in industry, scale, and maturity. This means that the study cannot claim to represent the full diversity of European digital ecosystems. Consequently, future contributions may broaden the sample, focus on specific industries, or define determined ranges of scale/maturity within which to include players under analysis.

Second, the strategic rationales analyzed primarily stemmed from press releases, articles, interviews, and company documents and were complemented by tech M&A professionals. These statements reflect observable and communicated decisions, but they do not disclose more complex and confidential considerations that remained within the scope of the firms' decision-making process. This means that the analysis catches high-level M&A drivers, but most hidden factors influencing the operations continue to be unknown.

Third, even though some insights coming from acquired firms' perspectives were mentioned – especially those from Marco Lecchi, the founder of TopSquad, sold to Testbusters – the research focuses on buy-side's points of view. Future investigations may collect sell-sides' standpoints and delve into the reasons that pushed them to sell their businesses and become part of a digital ecosystem.

Fourth, emphasis is posed on strategic reasons behind M&A operations. Obstacles recurringly manifesting during such a process – such as valuation disagreements, cultural clashes, regulatory hurdles, integration challenges - were suggested by tech M&A experts, LimoLane CEO's and present heterogeneously throughout the text, but the study did not investigate them in depth. Hence, further studies may focus on the analysis of the hurdles which arise when a deal originates.

Fifth, the research did not assess the outcomes stemming from the transactions considered; thus, it is not fully clear whether the operations turned out to be successful or

not. Additional research may evaluate whether the actions implemented by the actors analyzed brought benefits at an ecosystem level or not.

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