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DOCTORAL SCHOOL OF LAW AND POLITICAL SCIENCES

**REGULATION OF DIGITAL MARKETS:
A SNAPSHOT**

The DMA in the light of corporate compliance

Abstract of the Doctoral Thesis

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„In our times, it is not enough to write laws; it is also necessary to inspire a common understanding and acceptance for them.”

Széchenyi István¹

„Wisdom lags far behind the market.”

Frank H. Easterbrook²

¹ „Nem elég mai időkben törvényeket írni; de azok iránt szimpátiát is kell gerjeszteni.” Széchenyi, I. (1981). *A Magyar Akadémia körül*. Magvető, (translation by F.J.).

² Easterbrook, Frank. H. (1984). Limits of Antitrust. *Texas Law Review*, 63(1), p.5.

1. SUBJECT AND RESEARCH OBJECTIVES

1.1. SUBJECT AND TOPICALITY

Digitalisation has transformed business operation in all industries, and the European legislation responded to this with a sweeping wave of regulation of the digital economy. As for the competitiveness of the European economy, the European Union seeks to strengthen its digital sovereignty by focusing on data, technology, infrastructure and the economic implications of digital transformation in order to ensure the effective functioning of the Digital Single Market and the creation of a single European data market.

Timeliness of the research underlying the thesis is given by the EU legislative process triggered by the digital transformation. In the period between 2020 and 2022, this process has included the evolution of the DMA³, a central piece of legislation which has recently come into force.

Both the explosive pace of digital transformation and, as a response, the changing regulatory environment pose a continuous and significant *adaptation challenge* for market players. Taking the context of the DMA's regulatory regime as a starting point, while placing it in the broader regulatory context of the digital economy, the thesis addresses the issues that preliminary interviews and professional dialogues identified as being the primary determinants of adaptation to regulatory transformation for digital businesses operating in the Hungarian market. The thesis considers as digital enterprises all those market players whose offer is based on digital technologies and/or which use digital technologies in their activities.⁴

1.2. RESEARCH TASKS AND OBJECTIVES

The final aspect of the thematic delimitation of the thesis, the actual basic research question, was to determine which issues are the most significant problems for Hungarian digital enterprises (particularly in relation to their innovation projects) in terms of regulatory compliance, based on the DMA. The research underlying this thesis has identified the following issues and related *research tasks*:

- (i) delineating the role and issues of *digital compliance*;
- (ii) interpreting the *basic concepts (digital markets, digital sector, ecosystems, platforms) that affect the scope of digital compliance* and, through this, the approach of the DMA in the EU regulatory framework for the digital economy;
- (iii) exploring *the legal issues of cross-cutting compliance needs in digital regulation*;
- (iv) *positioning* in the compliance framework *the opportunities and the legal tasks from the feedback possibilities* which arise from the fact that regulation faces a higher uncertainty factor than at any other time before and therefore adopts feedback mechanisms.

In this way, the thesis can be regarded as a snapshot, focusing on the analysis of the main compliance issues surrounding the entry into force of the DMA. In essence, the objective of the research tasks identified above is twofold: on the one hand, to identify methodological cornerstones for corporate compliance to process and unfold digital regulatory issues, and on the

³ Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828 (Digital Markets Act), OJ L 265., 12.10.2022, p. 1–66.

⁴ Lyytinen, K., Yoo, Y., & Boland, R. J. (2016). Digital product innovation within four classes of innovation networks. *Information Systems Journal*, 26(1), 47–75.

other hand, to identify further research directions for a regulatory approach to tracking innovation through the hypothesis on feedback loops.

2. RESEARCH METHODOLOGY, STRUCTURE OF THE THESIS

The motivation for enrolling for the doctoral studies in the spring of 2019 was the realization, directly derived from the practice of law, that *digital transformation* permeates almost all segments of social and economic life, and can no longer be formulated in a reductive sense, as a mere information technology issue.

By the time the doctoral studies commenced - in autumn 2019 - it was clear that the ongoing data revolution and the technological developments behind it had also led to significant and conceptual changes in the behaviour of market players, and that we are facing further changes of an even greater magnitude than before. The economy as a whole has been transformed, new spheres of society (e.g., the supply and demand side effects of social networks, their advertising and data production potential and, more recently, their functioning as marketplaces) have been monetised as part of new business models and have become new areas of market activity.

The research plan submitted in the application set the main focus of the study as "the qualitative transformation of market processes directly affects the assessment criteria, enforcement practice and regulatory issues of competition law, both in terms of the underlying phenomena and in its interaction with other areas of law (in particular data protection law, which is also undergoing a transformation, and IT law, which is intended to address the regulatory issues of new technologies)".

In the research plan, the fundamental question was formulated along the main lines described above. On the basis of the fact that digital transformation has been radically reshaping the behaviour of market players and market processes, the focus of the study was to examine whether the paradigm of competition law established in "traditional" markets can be applied to "digitalised" markets without significant changes (also bearing in mind that the framework nature of competition law means that the role of enforcement practice is decisive and that, if competition law remains unchanged, the paradigm can change even if enforcement practice changes).

At the time of the application to , it was not foreseeable that a major legislative wave would soon be launched in the European Union. The background to the research was the overall legislative process affecting the digital economy, a process that directly influenced the formulation of the research question and the methodology. It should be noted that this was accompanied by two further external processes which can be identified as factors framing the research: (i) the successive waves of pandemics which have acted as a catalyst for the processes in the digital economy, (ii) the continued rapid development of technology, in particular the artificial intelligence-based systems.

The EU legislative process has also entailed the European Commission responding to the primary research question by developing, adopting and enacting the DMA at record speed, in response to the challenges posed by the functioning of the data-driven economy, in particular by the gatekeeping platforms.

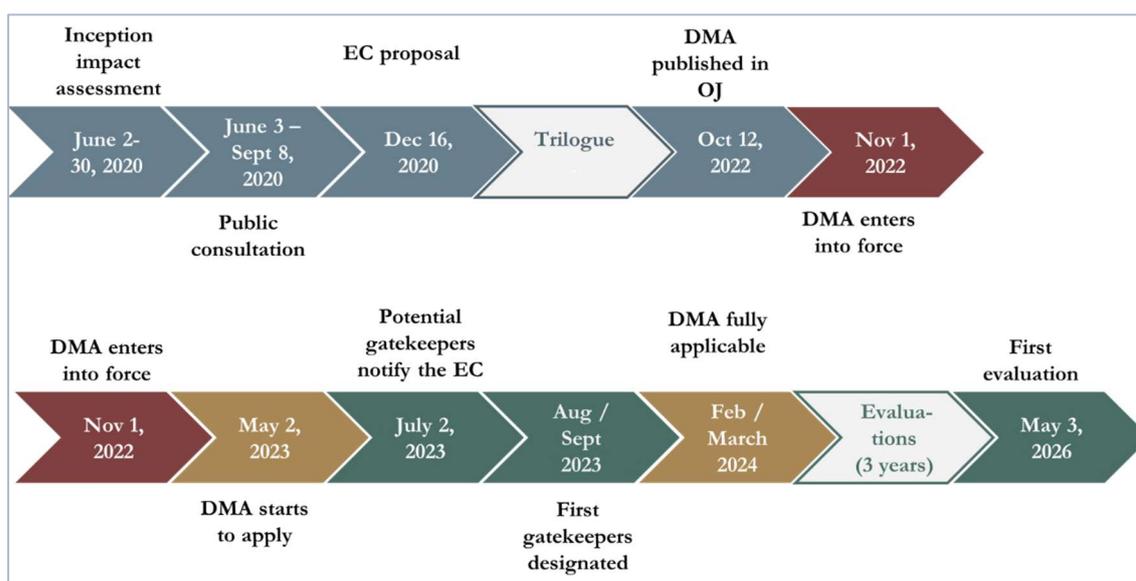


Figure 1
Legislative and enforcement milestones of the DMA
(Source: own ed.)

From a market perspective, the research coincided with the preparation period for the DMA from spring 2020 (as depicted by the first row of *Figure 1*). The research plan elaborated for the doctoral studies in 2019 was intended to provide a cross-section on how the relevant domestic market players perceive the legal and regulatory implications of the paradigm shift caused by the digital transformation. Since the emergence of the European Commission's proposal on the DMA, this dimension has gradually come to the fore and, in large part, this has led to a research approach rooted in the law in context approach, as it has sought to pursue a broader and simultaneous understanding and modelling of the underlying political and economic issues and the emerging regulatory responses. In this vein, it follows the approach pioneered by Francis Snyder,⁵ which is still relevant in current legal thinking⁶ and considers EU law as a complex fabric of politics, economics and law, and thus requires an interdisciplinary, contextual and critical approach to its study.

The research was also framed by the debate that was put on the agenda of the Scientific Council of World Economics of the Hungarian Academy of Sciences in 2019, which focused on the question of the ability of domestic and regional digital enterprises to play the role of an alternative growth engine.⁷ As a starting point, the debate raised whether the activities of domestic digital

⁵ „European Community law represents, more evidently perhaps than most other subjects an intricate web of politics, economics and law. It virtually calls out to be understood by means of a political economy of law or interdisciplinary, contextual or critical approach.” Snyder, F. (1987). New Directions in European Community Law. *Journal of Law and Society*, 14(1), 167–182. <https://doi.org/10.2307/1410304>.

⁶ Harlow, C. (2022). The EU and law in context: the context. *European Law Open*, 1(1), 209–215. <https://doi.org/10.1017/elo.2022.10>, valamint Herlin-Karnell, E., Conway, G., & Ganesh, A. (2021). *European Union Law in Context*. Bloomsbury Publishing.

⁷ A Világgazdasági Tudományos Tanács kilencedik ülése, 2019. december 12. <https://kti.krtk.hu/hirek/hirek-2/sass-magdolna-eloadasa-a-vilaggazdasagi-tudomanyos-tanacs-kilencedik-ulesen/>. Szanyi, M. (2021). Előszó - A Világgazdasági Tudományos Tanács 2019/20-as működése és a megvitatott témák. Digitális átalakulás és felzárkózás gyártó gazdaságokban - Magyarország példája. In Szanyi, M. Szunomár, Á. & Török, Á. (Szerk.), *Trendek és töréspontok II*. Akadémiai Kiadó.

enterprises could result in qualitative development based on local innovative solutions, generating significant local added value, which could have a significant impact on the transformation of the development path, which, according to the findings of the investigation, has been mainly dependent on the investment decisions of direct capital investors.⁸ In parallel, the question was formulated as to whether these enterprises are able to dynamise the economies of Central European countries to such an extent that they can initiate a change in the growth model. Both subsidiaries in global value chains (predominantly part of multinational groups) and local technology companies perceive that significant digitisation efforts are a prerequisite for them to remain competitive. This is a competitive parity, not a competitive advantage, since their competitors are making similar efforts, and therefore development in most cases only ensures the preservation of the existing balance of power, not necessarily creating a breakout opportunity.⁹

The initial steps of risk management in corporate operations are the exploration, identification and assessment of risks: the criteria to be applied in this process are very diverse even in traditional markets. The explosive EU digital legislative process and the conclusions of the above discussion have led the research to (i) examine the strategic importance of corporate compliance, (ii) place it in the so-called three-legged strategic model summarising corporate constraints and opportunities, and (iii) conclude that corporate compliance is relevant both in terms of institutional conditions and company-specific resources and capabilities.¹⁰ In the context of rapidly evolving digital markets and digital regulation, compliance is a strategic issue for enterprises, directly affecting the performance of relevant market actors.

Individual interviews and expert dialogues (in particular thematic workshops and meet-ups), including in-depth data collection with forty experts, were used as an exploratory and empirical tool to uncover compliance issues. *Chart 1* shows the professional background of the experts participating. A specific and highly valuable subset of the discussions are the experts involved in business and professional training in digital services, where the needs and issues related to digital services (technology, data management, market entry, changing business models, changes in value chains) are integrated.

⁸ Sass, M. (2021). Jobb ma egy veréb, mint holnap egy tüzök? - Alternatív növekedési utak keresése a visegrádi országokban. In Szanyi, M. Szunomár, Á. & Török, Á. (Szerk.), *Trendek és töréspontok* (pp. 10–59). Akadémiai Kiadó., illetve Szalavetz, A. (2021). Digitális vállalkozások Magyarországon - Egy növekedési alternatíva. In Szanyi, M. Szunomár, Á. & Török, Á. (Szerk.), *Trendek és töréspontok* (pp. 24–31). Akadémiai Kiadó.

⁹ Demeter, K. (2021). Digitalizáció alulnézetből. In Szanyi, M. Szunomár, Á. & Török, Á. (Szerk.), *Trendek és töréspontok II.* (pp. 100–115). 2021.

¹⁰ Peng, M. W. (2022). *Global Strategy* (5th Edition). Cengage.

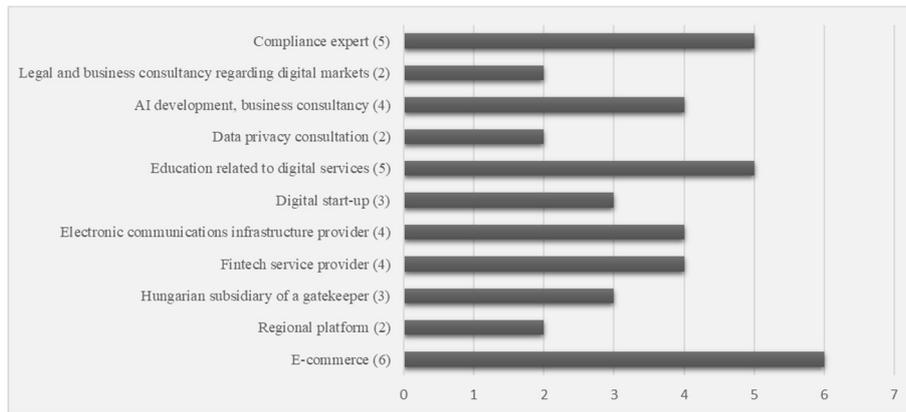


Chart 1
The experts surveyed broken down by professional background
(Source: own ed.)

As EU regulatory initiatives affecting digital markets were not widely known in the initial period of data collection, the interviews included a description of the content of the DMA (according to the current legislative status) and a regulatory map was developed, which followed the identification of the compliance issues perceived as most important in the digital economy. *Figure 2* was drafted after the public consultation on the legislative initiative on the DMA was launched (summer 2020).

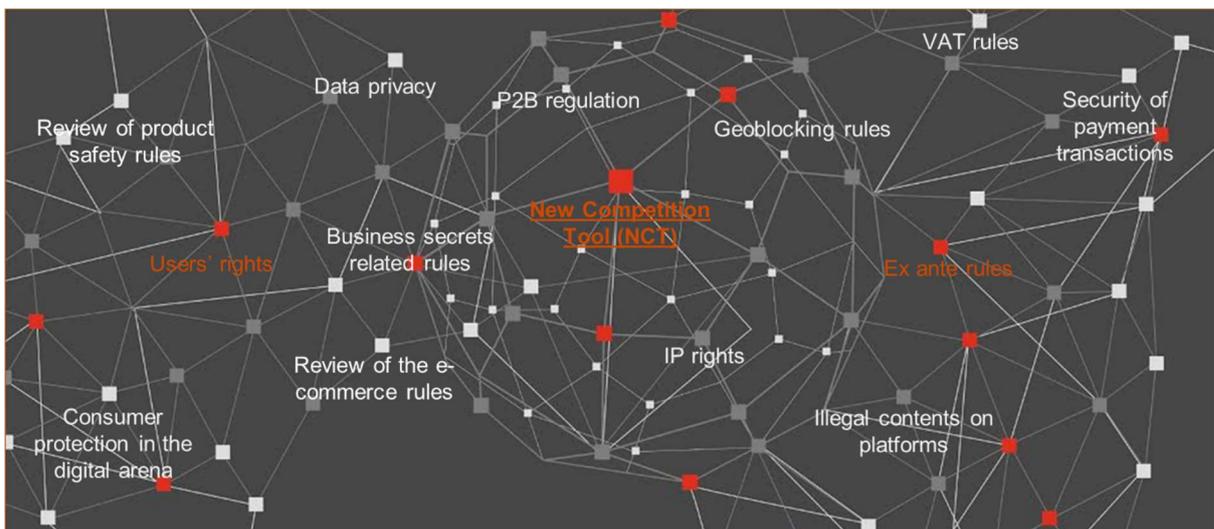


Figure 2
Regulatory map – first version (2020)
(Source: own ed.)

Over time, as awareness of EU initiatives has increased, market players have also expanded the EU legislative elements and initiatives they consider relevant to the regulatory environment of the DMA. *Figure 3* illustrates the situation at the close of the data collection period on 9 May 2023.

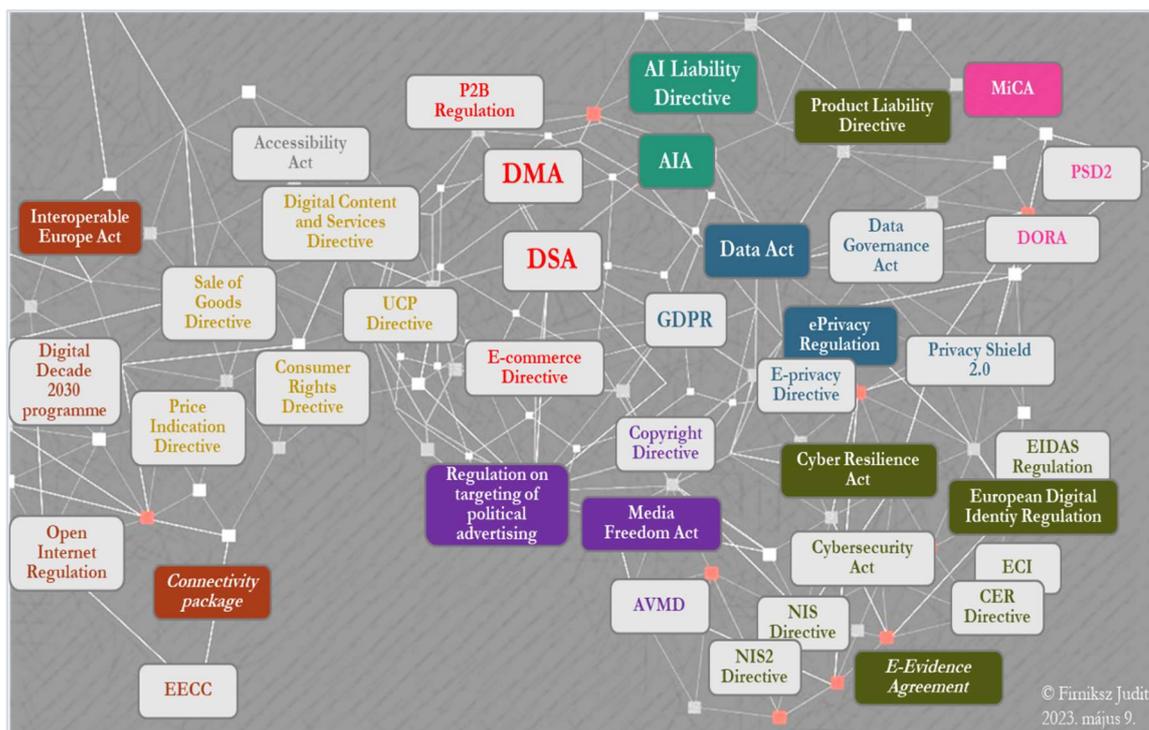


Figure 3
Regulatory map closed on 9 May 2023
(Source: own ed.)

The final aspect of the thematic delimitation of the thesis was to determine which issues are the most significant compliance problems for Hungarian digital enterprises (especially in relation to their innovation projects), based on the DMA. The data collection meetings with market players consisted of the following steps and led to the following conclusions:

- *What is the role of compliance in digital businesses:* the majority of respondents answered that the role and framework of compliance in digital businesses is not clear;
- Starting from the DMA, i.e. the EU's regulatory axis for the digital sector, identifying the compliance issues perceived by market players as most important in the digital economy and place them on the regulatory map;
- Introduction of the DMA regulatory system, the figures and tables used and continuously improved for this purpose have been included in the thesis (as Figures 9 and 10 and Tables 2 and 3);
- *What are the main sources of risks arising from the DMA (as an external legal environment):* respondents identified two main trends here: (i) There was almost unanimous opinion that the interpretation of the basic concepts concerning the scope of compliance issues is unclear to them, and that this hinders the regulatory approach to the DMA in the EU regulatory framework for the digital economy. (ii) The problem of cross-cutting compliance issues in digital regulation was highlighted by two thirds of respondents, who suggested that they encountered a number of issues that overlap most of the regulatory areas depicted in the regulatory map. In this respect, the majority of the gatekeeping obligations (as compliance requirements) identified prioritisation and interoperability as the most relevant elements.

The chapters of the thesis follow the identified compliance issues, with the second chapter delineating the role and issues of digital compliance as an emerging new legal "genre". The third

and fourth chapters explore the interpretation of the basic concepts (digital markets, digital sector, ecosystems, platforms) that are relevant to the scope of digital compliance. The fifth chapter examines the problem of cross-cutting compliance issues in digital regulation through two specific examples (prioritisation, interoperability). The sixth chapter analyses the role of compliance in the light of the feedback possibilities for regulators working with a greater uncertainty factor than ever before. In this way, the thesis can be seen as a snapshot, focusing on the most pressing compliance issues around the entry into force of the DMA. The summaries that conclude each chapter, and the conclusions that they reach, in most cases also provide problem statements that identify potential research directions, which should be considered in greater detail in the light of the further development of the digital economy and the future jurisprudence of the digital regulatory landscape that is now emerging (including the DMA in particular).

In addressing the questions defined in the applied law approach rooting in corporate-level regulatory compliance practice, the research is based on the widest possible analysis of the relevant Hungarian and international literature, primarily on the legislation and case law of the European Union. In addition to studies and publications in the field of jurisprudence, the analysis involves also economic sources, given the economic roots of the subject, and, although only tangentially, will also take into account certain works on the impact of regulatory changes on society. The thesis does not rely on the method of legal comparison, it only points out, to the extent strictly necessary, the problems arising from the differences between the various legal systems.

3. RESEARCH FINDINGS

3.1. THE ROLE AND CHALLENGES OF DIGITAL COMPLIANCE

Compliance is a corporate tool and (ideally legally demonstrable) manifestation of *voluntary norm-following behaviour*. In the broadest sense, compliance is a *form of corporate behavior* that ensures compliance with (i) various external norms and (ii) internal norms set by the company itself for its stakeholders, including its owners, employees and contractual partners, based partly on external standards and partly on moral and ethical foundations that determine the corporate culture. Efforts in regulatory compliance, and in particular in digital compliance, while not directly profitable, are considered a justified expenditure in the long run.

At the same time, it is obvious that corporate compliance is no longer just a specific genre for multinational companies. If domestic digital businesses want to integrate into innovative value creation processes, they have to face also the inevitable challenge of an increasingly complex and far-reaching international, EU and domestic regulatory environment. They need to take actual and effective steps to build a functioning compliance management system in order to develop and integrate a system that is (i) transparent, clearly assigning roles and responsibilities to all, (ii) providing management with the right information in an efficient and timely manner, and capable of delivering preventive interventions to ensure voluntary norm following in a demonstrable way.

Risk management mechanisms provide the basic layer of compliance systems. Among the external risks, the regulatory environment is prominent, and its rapid change is a risk driver. The identification of relevant legal and ethical norms and compliance with them is described in corporate terminology as *regulatory compliance*. Currently, a new concept is emerging within this, *digital compliance*, which focuses on the regulatory environment relevant to the operation of digital businesses.

Action based on proper risk assessment and risk evaluation, followed by steps built on the principle of *risk-tailored resource management*, can reduce the costs and damage arising from the risks associated with the legal environment and its changes. Traditionally, the benchmark in this area has been the monetary value of sanctions associated with potential infringements. However, the importance of the fiduciary element in digital markets also means that *reputational risks* arising from negative consumer, business partner, shareholder, investor or regulatory perceptions of an organisation as a result of non-compliance with external standards can have a fundamental impact on profitability and result in a company's external image fails to meet the desirable level.

Furthermore, with regard to the innovation-driven markets it is of particular importance that compliance does not stop at the organisational boundaries of the company, but needs to be examined in the context of the responsible value chain and the responsible ecosystem, according to the specificities of the value creation processes. Given the general spread of the *design thinking paradigm*, it is particularly noteworthy that antitrust enforcement has become more prominent in areas that are new compared to the past, such as product design and business model issues. This clearly points towards a preventive approach, where compliance is expected to have a crucial role at the earliest stages of business planning, before other business model decisions are made in product development, design processes or product design.

The thesis outlines the so-called *three-legged strategic model (tripod model)*, which summarises the constraints and opportunities that determine corporate competitiveness. By incorporating digital compliance in the model, the link with the institutional approach is obvious. Digital

compliance has a direct impact on corporate strategy and performance through dynamic interaction with external formal institutions.

However, in addition to the institutional approach, digital compliance is also relevant from the perspective of firm-specific resources and capabilities, as it has an impact on innovation resources and dynamic capabilities (for example, by ensuring the legal implementation of design-thinking as mentioned above). At the same time, reputation is also a resource in competition, as it can effectively represent firm and product attributes in comparison to competitors and substitutes,¹¹ thus, evidently, digital compliance has a direct impact on reputational resources.

In summary, digital compliance is a strategic factor directly determining the competitiveness of digital businesses. However, the Collingridge dilemma in terms of regulation of technology issues draws attention to the issue that if regulation does not intervene at the right pace or with the right tools, it can constrain innovation and investment. In such cases, *the impact on competitiveness of effective compliance with external regulation may even be counterproductive*. It is therefore also necessary to examine the issues related to the regulatory regime of the DMA from the perspective of how, if barriers to innovation that can be attributed to regulation are identified in the course of business operations, they can be channelled back to the legislature.

3.2. BASIC CONCEPTS CONCERNING THE SCOPE OF DIGITAL COMPLIANCE

The DMA defines the basic concepts that make up the essence of regulation in a very complex way, with multiple referrals (information society services – digital markets – digital sector) or not at all (platform). This seriously hampers the understanding of the already complex regulatory relationships, their regulatory context, and the internalisation of the relevant obligations for compliance.

3.2.1 DIGITAL MARKETS, DIGITAL SECTOR

An important characteristic of information society services, and at the same time a source of major problems of interpretation, is that, like other regulatory instruments of the digital economy, *the DMA is partly a technological regulation and partly a technologically determined regulation*, if only because the conceptual element of these services is that they are delivered electronically. For compliance, this means that the requirements go beyond the mere translation into the language of business economics and the "local dialect" expressed in the current operating model. In order to be able to enter the technological development phase, digital compliance is also expected to be able to perform tasks involving simultaneous interpretation in the language of the IT and infocommunication, which are necessary for daily problem management.

In the case of the DMA, the regulation is based on a "*semi-flexible*" alternative, with the following regulatory elements: (i) an exhaustive, closed list of core platform services; (ii) a combination of quantitative and qualitative criteria for the qualification of undertakings providing core platform services as gatekeepers; (iii) directly applicable obligations, consisting of both automatically applicable "self-executing" provisions and obligations based on regulatory dialogue; (iv) a feedback loop, which allows the European Commission to update and keep up-to-date the obligations for gatekeepers following market investigations.

In the field of digital compliance, in addition to the understanding of the technological determination and the economic background concerning the characteristics of the market structure

¹¹ In connection with the examination of the model, it also emerges as an interesting side-conclusion that due to the peculiarity of the co-moving operation based on modularity and interoperability in the world of ecosystems, in addition to substitutes, accessories can also exert significant market pressure.

(e.g. the multi-sided market operation), it is necessary for corporate orientation to take into account *the legal and regulatory context in which the relevant norm is embedded*. The difficulty in interpreting the concept of digital markets arises primarily from the fact that the DMA starts with the premise that it is another new sectoral market regulation. However, since market definition is actually one of the biggest difficulties in digital markets, it shifts from a market regulation logic to a '*gatekeeper regulation*' logic. It further adds to the picture that the DMA has set up a dual system of subject matter and personal scope. The 'general' scope can be equated with the digital sector, which is made up of information society services and the products and services based on them. However, the DMA thereby broadens the scope of regulation to the point of making it unlimited, and therefore departs from the classic regulated sector logic (familiar from electronic communications, pharmaceuticals, financial sector) covering all operators in the sector: it narrows the focus to designated gatekeepers providing basic platform services. Hence, the „narrowed and "concretised" scope of the DMA is limited to the range of core platform services listed in the DMA and the designated gatekeepers of those services, and the DMA thus creates obligations for them.

In contrast, the digital sector is in fact a very broad and constantly evolving and changing set of relevant products and services, due to their rapid change and evolution. Actually, this is a moving range for interpretation which will obviously come to the fore and gain its real importance when (i) the new merger rules are applied to services that are not considered core platform services but can be included in the sector, and especially when (ii) the application of the review feedback built into the DMA system is triggered, as this is the interpretation domain for the update and modification rules.

The EU legislator has apparently decided to base the scope of the DMA on specific, itemised rules rather than broad rules in order to facilitate implementation and increase legal certainty. However, one of the most significant coherence problems in the interpretation of the DMA from the point of view of digital compliance is due to the fact that the DMA does not provide a comprehensive interpretative framework for core platform services, and the same problem exists for the obligations and prohibitions on gatekeepers. As a result, in the course of interpretation, it is difficult to (i) logically systematise core platform services and behavioural requirements, and (ii) derive them by teleological interpretation for the purposes of DMA. With regard to the twenty-two-item behavioural requirements contained in the DMA, the thesis provides a multi-dimensional systematization also applicable to practice in a tabular form (i) by distinguishing, from a procedural point of view, between the automatically applicable "self-executing" provisions and the obligations based on regulatory dialogue; (ii) by grouping the obligations along the main thematic contexts relevant to practice (behaviours related to the exercise of market power and its extension; provisions relating to switching and multihoming; broadly interpreted access issues; provisions of a guarantee nature affecting the value chain of online advertising markets affected by the operation of a multilateral market); (iii) by identifying the provisions relating to data management and data management.

3.2.2 *PLATFORMS, REGULATION OF PLATFORMS*

European platform regulation, including DMA, is in fact one of the main pillars in the European digital economic regulatory ecosystem, the approach of which roots in the traditions of EU regulatory instruments and industrial policy.

Another challenge in the interpretation of digital compliance is that, although the concepts of platform, platform regulation and platform law are frequently used in national and EU economic and legal regulation, the concept of platform still lacks a single and comprehensive definition,

along which regulatory objectives, concepts and instruments placed in different legal instruments could be placed in a single regulatory context. An examination of the regulatory history shows that EU legislation on the platform does not aim from the outset to establish a comprehensive conceptual framework, but has instead adopted a problem-oriented approach, assigning intervention steps to the dysfunctional aspects of platform operation. By integrating this *problem-focused* approach into the digital compliance perspective, the thesis has sought to approach the interpretation of the concept of platform by examining the problems that European platform law seeks to solve.

From the point of view of the competitiveness of the European economy, the core of the problem is how *the regulatory traditions of European integration logic in trade and industrial policy, expressed in the concept of the single market*, can be transferred and developed in an environment of economic processes that have moved online and become highly complex. Platforms as 'private' barriers to trade policy, and platform operations, including global gatekeepers as companies with too much economic power, have raised and continue to raise complex questions about the elements of an EU public policy regulatory mix to maintain competitiveness in competition with large non-EU companies, and which problems fall within the domain of which public policies. Convergence in the area of regulated market environment necessarily also blurs the boundaries of regulatory areas, making it extremely difficult to delineate economic phenomena along the lines of the former regulatory logic and to integrate them into the traditional framework of individual policies (competition policy, industrial policy, trade policy, sectoral policies, etc.).

The traditional horizontal-vertical regulatory distinction has become obsolete in defining the "*scope of compliance*" in the economic relations represented by platforms, and the framework of the scope of platform law can be defined by analysing ecosystems rather than sectors. The *need to switch to a compliance analysis framework based on ecosystems* is confirmed by the fact that, in the regulatory ecosystem paradigm, European industrial policy treats digital industries as one of the 14 industrial ecosystems that make up the single European market.

In addition to the regulatory issues addressed by the DMA, a further problem with platforms is that their presence creates tensions in related ecosystems, including the internet ecosystem. The combination of the market power of global platforms, the proliferation of audiovisual OTT services and net neutrality requirements has led to a significant reallocation of the revenues and economic burden of this value-creating activity. Thanks to technological innovation, an increasingly widespread functional convergence process can be identified as the impact of OTT services. This process is driven by the facts that on the one hand the time and attention of the users as a scarce resource, and on the other hand, the boundaries of content consumption are widened, while the lines between previously separate services and content have been blurring. The impact of functional convergence processes is reflected in the transformation of the business models of all actors in the content value chain. As a result, some actors in the value creation process (e.g. ISPs, content providers, copyright holders) have perceived that they received a disproportionately small share of the revenue generated compared to the value they add, and that the return on investment is much lower.

The third problem related to platforms derives from their internal regulatory and coordinating function. The thesis considers any form of operation as a platform which enables the creation of interfaces, spaces and services based on Internet-based connectivity and digital technologies as infrastructure, which enable the most diverse range of subject matter and purposes to be connected between different social and/or economic business and/or end-user groups. The previously distinct types of knowledge-based, innovation and economic ecosystems are tightly integrated in the world of digital ecosystems and the borders between them are also becoming increasingly

fluid. Technological and business innovation are intrinsic to value creation in the digital economy, bringing with them new market behaviours and operational logics, and hence the innovation and value creation dimensions are inextricably linked in digital ecosystems. Another dimension of interconnection is that a business can be present in more than just one ecosystem. Platforms can therefore be seen to form a common node in multiple inter-acting ecosystems, and in such cases they may simultaneously coordinate a system of „multi-layered”, multi-sided markets. In such cases, the source of the platform's market power comes from all the ecosystems it regulates and influences in an integrated manner.

From a digital compliance perspective, the internal structure of the platforms calls for two main lines of analysis. On the one hand, in merger transaction planning, even digital enterprises that are not gatekeepers should take into account the *new merger provision of DMA* and the future impact of the damage theories used in its application on merger valuation. Indeed, the "semi-flexible" intervention toolbox in the DMA is complemented by the merger rule in Article 14. This requires the gatekeeper to notify in advance to the European Commission any proposed merger in which the parties or the target company (i) provides a core platform service, (ii) provides any other service in the digital sector, or (iii) enables data collection, irrespective of whether the merger would otherwise be notifiable to the European Commission or to the national competition authorities under the relevant thresholds.

The other main compliance focus is the assessment of the *potential entry into the digital ecosystems*, which is determined by the organisational logic of the ecosystem, the roles, governance, coordination and regulatory structures developed in it. In interconnected digital ecosystems, the leadership role played by platforms in the simultaneous coordination of multi-layered and multi-sided markets can be composed of several possible elements: (i) ecosystem governance, i.e. the definition of the internal and external ecosystem linkages, the internal flow and allocation of resources; (ii) partnership building, i.e. the definition of the framework for cooperation with external platforms, industry actors, innovators; (iii) technical platform management: technological design of the platform operation, designing the open or closed nature of the platform and, in this context, providing entry points for complementary innovations; (iv) value management: internal design of value creation processes, building reputation and trust with business partners and consumers; (v) decision making on mergers.

Upon entry, digital businesses have to accept *the framework of internal rules* developed by the platforms, which can also be considered as individual legal systems in their own right. The platforms have created legal architecture that can be regarded as a disruptive legal innovation, whereby the platform exercises the enforcement power to enforce the contractual systems, internal rules, policies, codes of conduct, which provide a specific regulatory dimension to the exercise of market power. It should be noted that this dimension is in fact reinforced by the requirements to operate the accountability and internal compliance systems (e.g., based on reporting, complaint handling and internal dispute resolution requirements) set out in the P2B Regulation and DSA. This line of thought brings us to the question of the relationship between the *transnational coercive power* represented by platforms and the institutional system of state enforcement, and poses the question of how the issues arising from the internal regulatory function of platforms can be properly positioned in the regulatory context.

The thesis agrees with the approach that views platforms as a kind of specific coordination mechanism and, from this point of view, draws a parallel between platforms and the bureaucratic organisation and the market, in that without supervision and intervention, platforms turn into dysfunctional operations (monopolization, cyclical crises, and abuses and arbitrariness), thus causing economic and social dangers and damage. One of the primary negative consequences of

the dysfunctional functioning of platform power, as a potential source of danger to be monitored, is the unjustified vulnerability of users. By placing the coordination mechanism approach and the dangers arising from the uncontrolled (and arguably manageable by competition law) platform power in the logic of compliance practices of digital businesses, some further conclusions can be drawn:

- it is difficult to draw the limits of the coordination power and impact exercised by platforms, as they involve at least three dimensions: (i) the technological-infrastructure dimension, (ii) the economic dimension, (iii) the social dimension;
- the operation of the platforms cannot be separated from the structural changes in value creation processes, from the development of global value nets and economic ecosystems: therefore, the superpower of the platforms can be significantly asserted not only vis-à-vis users, but also in the direct and indirect business relationships connected along interconnected value chains;
- the operation of platforms directly or indirectly affects the operation of digital businesses, mainly from a technological-infrastructure and economic point of view, but the potential social consequences must also be taken into account when designing business and operational models, in order to avoid restrictions that could have negative externalities, including restrictions on fundamental rights (e.g., freedom of expression);
- the development of the platform economy is driven by business and technological innovation, and is characterised by the inextricable and mutually interconnection of technology with the business and operational models, and convergence processes are eroding the former sectoral divisions: regulation itself and the interpretation of regulation must cope with the co-management of economic and technological issues;
- the lack of a comprehensive definition of platform suggests that though some effects of platform operation and some manifestations of platform power are perceived and assessed by the regulator as dysfunctional, but the underlying complexity is not yet fully understood, and therefore: in the context so-called Collingridge dilemma, it is not even possible to provide a conclusive answer as to whether regulatory intervention is premature or postmature in terms of innovation.

3.3. COMPLIANCE ISSUES PERVADEING DIGITAL ECONOMY

3.3.1 RANKING

The issue of *ranking* gives an insight into the operational logic of the attention economy, where market players, including platforms, compete with each other in the contest for the attention of users and consumers. The ranking of online offerings has a fundamental impact on the consumer decision-making process and on the effectiveness of e-merchants on the platforms by ensuring visibility and discoverability in the flood of information that fills the online space. The aforementioned two concepts are very closely related, both referring to the availability of some content or information, only while (as illustrated in the Amazon Buy Box case) discoverability refers to the search for something in an identifiable, concrete or even already known space (such as an e-commerce marketplace), at the same time discoverability refers to a search for an unknown location (discoverability and findability are essentially combined in the Google Shopping case).

From a compliance perspective, findability is central to *product design*, as it is related to information architecture (the structuring of the online information environment, including the organisation and labelling of websites, intranets, online communities and related embedded software); user interfaces to facilitate the achievement of user goals; assistive devices for people

with disabilities and people with limited digital competences to enable accessibility; and search engine optimisation aspects.

From a regulatory angle, it first emerged in P2B relationships, i.e. between platforms and their business partners, that it is crucial for the latter to be aware of the underlying reasons for their ranking and whether and how they could achieve a better ranking, including through paid ranking. The P2B Regulation has responded to the new regulatory demands arising from the particular characteristics of the attention economy by introducing the concept of ranking into the substantive law. On the one hand, ranking can be taken to mean the *relative prominence* given to goods and services offered through online intermediary services and, on the other hand, in relation to online search engines, ranking can be defined as the *relevance assigned to search results*.

The analysis of the rules of the P2B Regulation and the antitrust cases based on the abuse of dominance logic leads to the conclusion that platforms can have a powerful impact on (i) the visibility of their competitors, i.e. the visibility of a company's brands or products in a given user environment, by using design elements of findability and discoverability that ensure relative prominence, in a way that is *completely different from the practices of the offline world* (and mainly based on data analytics), by influencing consumer/user decisions; and (ii) the performance of their business partners in the ecosystem, such as logistics and fulfilment service providers.

The self-preference limitation in the DMA for ranking requires the gatekeeper to refrain from giving preferential treatment to services or goods offered directly or indirectly by itself in relation to its own services or goods in relation to each of its core platform services, as compared to third parties. In this way, the DMA seeks to capture the essence of integrated platform models, in which platforms provide all or part of their products or services to consumers or end-users through their own or other entities' core platform services under their control. This also causes a conflict of interest in terms of ranking, as they can provide better visibility and discoverability conditions for their own products/services compared to third parties operating on the infrastructure of the core platform services they operate or indirectly manage. In interpreting the ranking rules, however, it should also be borne in mind that these are obligations under Article 6 of the DMA, i.e. obligations which fall within the scope of the regulatory dialogue, i.e. which require further clarification. Referring back to the findings of the previous chapter, it is apparent that this is a gatekeeping obligation where the legislator has left open the possibility of balancing conflicting values and interests on a case-by-case basis.

Ranking provisions, and also the relevant *information disclosure rules* in the P2B Regulation, the DSA and the UCPD are complex, with several different layers and approaches. This raises the question of whether traders and consumers, already operating under information overload, will be able to process the *additional information* provided to them and whether they will be able to adequately benefit from it and protect themselves from it. Also, in view of the spread of AI-based systems, it is an important question for the future of compliance whether the ranking will actually be determined through a series of interactions based on conscious and informed decisions of empowered users/consumers. Or, on the contrary, the above information obligations will constitute an additional administrative burden – as a dead paragraph – in the new annexes attached to the general terms and conditions, further increasing the tension caused by information noise in the business relations. Last but not least, the future of regulation and the related enforcement nodes will of course depend to a large extent on how the new generations of e-consumers can adapt, and on the pace at which the basic (data protection, IT and economic) knowledge and the digital competences of e-consumers to navigate and understand the content of the mandatory information can develop.

3.3.2 INTEROPERABILITY

Interoperability offers insight into another segment of platform operation, the technical infrastructure level, where the ability to exchange information and to interoperate with each other through interfaces or other solutions determines which hardware and software elements are able to interoperate with the platform systems. In this cross-section, a platform is an architecture built on a digital foundation in which interoperability affects all dimensions of platform operation, both directly and indirectly. When a platform is located at the node of an ecosystem (or a common set of ecosystems), the lack of or limitations to interoperability with other services in that ecosystem and access to past and future ecosystem data make it difficult for new entrants to compete effectively.

In the context of the application of the DMA's rules on (i) *horizontal interoperability* for number-independent interpersonal communications services and (ii) *vertical interoperability* for sideloading and operating systems, the adoption of implementing acts and the possible standards and enforcement will provide a number of important inputs. *Security risks* are at the heart of the debate surrounding interoperability, and are of particular concern in the context of sideloading. These risks are taken into account also by the DMA itself when it requires, in its horizontal interoperability requirements, that the level of security provided by the gatekeeper to its own end-users (including end-to-end encryption) must be maintained between interoperable services and that the implementation must also limit the handling of user data to the minimum necessary at the metadata level. Vertical interoperability provisions in this area, with appropriate justification, allow gatekeepers to take proportionate measures, to the extent strictly necessary, to ensure that third party access does not compromise the integrity of the services and systems they provide and to allow end-users to effectively protect their security. It can therefore be observed that the future of interoperability provisions, in terms of their expected impact on the market, will depend to a large extent on the success of security and encryption solutions. In addition to the level of technology and security, the successful implementation of interoperability also depends on the impact of the necessary standardisation on innovation. This is an obligation under Article 6 of the DMA, where it is quite apparent that the legislator is not yet in a position to foresee all the relevant issues, and where the dialogue between the legislator and the market players could also provide important input for the learning process of the authorities and regulators.

In the arena of interoperability, it is also crucial to be aware in terms of corporate compliance (already referring ahead to feedback mechanisms) that the evolution of interoperability conditions will also directly influence the further *development of important emerging markets* such as the most diverse range of B2C and B2B IoT services. In designing the vertical interoperability provisions of the DMA, the legislator has taken into account that a gatekeeper may provide services or hardware, such as wearables or other IoT devices, that access the hardware or software functionality of a device running or controlled by a particular operating system (or even a virtual assistant) in order to offer applications based on it to end-users. In order to develop competitive offerings for end-users in such a situation, third party IoT vendors and service providers need equally effective interoperability and enabling access to the gatekeeper hardware or software functionality. In this context, it is also important that data interoperability provisions, which are essential for data-driven developments, are applied in line with data portability and data sharing issues, as together they ensure the preconditions for the implementation of the European Data Strategy and the development of the data economy.

Data access, as an unavoidable issue for data-driven operations, is also of primary relevance to e-commerce, and thus the DSA's focus on service providers operating online giant platforms or very popular online search engine is also relevant in the context of the data access requirements

of the designated obligations to address systemic risks. The DSA envisages the development of voluntary standards, set by European and international standards organisations, on interoperability issues that ensure the interoperability of interfaces, including APIs for audit access and public access to the former advertising repositories. This is not the only important interoperability requirement for the *e-commerce sector*, as it appears also as a prominent subjective requirement for contractual compliance in B2C contractual relationships. For a digital content, digital service or a product containing digital elements to be considered as being in conformity with the contract, it must have the functionality, compatibility and interoperability required by the contract.

3.3.3 CROSS-REGULATORY PARALLELS

In the analysis of ranking and interoperability, we have seen two very different areas of regulation "in action", both reflecting to phenomena of the digital world which cannot (or only to a very limited extent can) be described by offline analogies. For compliance, these are *buffer zones of competing interests* and, for the regulatory and enforcement authorities, *arenas for regulatory learning*, i.e., understanding new regulatory needs. It is no coincidence that both areas are subject to regulatory dialogue obligations under Article 6 of the DMA. To interpret these obligations, the compliance rules in Article 8 of the DMA should be invoked. Pursuant to this provision, gatekeepers are expected to ensure that the measures they take to fulfil compliance with the obligations imposed are *effective*, i.e., that they are capable of achieving the objective of the obligation concerned. Equally, it must not be neglected that Article 8 of the DMA also expects that these cross-regulatory compliance issues should be implemented *in conformity with data protection, cybersecurity, consumer protection and product safety legislation, as well as accessibility requirements*.

From a compliance standpoint, Article 8 of the DMA also points to a growing tendency for certain digital practices to become relevant not only for antitrust and the DMA, but also for a number of other areas of law, so that, in addition to jurisdictional issues, *the possibility of multiple assessments of all or parts of the same complex conduct becomes a key risk assessment consideration* for regulatory „topics“ that cross over several regulatory areas.

Market players perceive the relationship between DMA and antitrust as a real compliance challenge, this is one of the most difficult issues for market participants to understand. In order to avoid fragmentation of the single internal market, Article 1(5) of the DMA stipulates that neither the national legislator nor the national enforcement authorities may impose additional obligations on gatekeepers in order to "ensure competitive and fair markets". At the same time, however, DMA states that nothing in the DMA prevents member states from imposing obligations on, inter alia, undertakings providing basic platform services in respect of matters outside the scope of the DMA, provided that such obligations are compatible with EU law and do not arise from the fact that the undertakings concerned have the status of gatekeepers under the DMA.

Article 1(6) of the DMA then proceeds immediately to set out that this prohibition does not prevent member states from applying Articles 101 and 102 TFEU and their corresponding antitrust rules in national law, nor from applying national competition rules prohibiting other forms of unilateral conduct, when they apply to undertakings other than gatekeepers or impose additional obligations on gatekeepers. Ultimately, the essence of this regulation, which is difficult to understand at first sight, is that member states may not apply the DMA and may not impose additional obligations on undertakings qualified as gatekeepers under the DMA for the same purpose as the DMA or impose sanctions for breaches of the DMA, however, they may continue to impose and sanction the same behavioural obligations under EU or national competition rules

on non-gatekeeper companies and on gatekeepers for specific competition law infringements, provided that *the application of competition law does not otherwise conflict with the obligations imposed under the DMA* or their application in the single European internal market. The multiple conditionality itself is difficult to follow, but beyond that, it is not clear what should be considered to be conflicting with the DMA. In theory, there can be no contradictory decisions at all, since the European Commission is the exclusive enforcer of the DMA. Therefore, the only contradiction would be if a member state authority were to find an infringement on a classical antitrust basis, which is difficult to handle in the light of Article 1(6) of the DMA, which states that the DMA does not affect the application of antitrust rules by Member State authorities. Traditionally, in competition cases, the CJEU has applied the *ne bis in idem* principle, which ensures the prohibition of double assessment, by examining whether the legal subject-matter protected by the different proceedings or decisions was identical or different and, if so, whether the two parallel proceedings and even the two fines were admissible. This problem could even have been avoided by the DMA, since in recital (11) it clearly distinguishes the legal subject matter, it protects from the legal subject matter protected by the antitrust provisions of the TFEU and national law. At the moment, however the distinction between the DMA and competition law is difficult for compliance to grasp, as the DMA is a piece of legislation in which the rationale behind a number of obligations derives from recent cases launched by the European Commission.

This line of reasoning also points to the possibility of considering the *ne bis in idem* principle not only when the same complex conduct of the same undertaking may be subject to proceedings under the DMA and EU or national competition law at the same time. The data-driven operation has demonstrated the parallel relevance of antitrust and data protection in the assessment of particular conduct evident, and this has also been reflected in the dynamics of data protection and competition enforcement. In the context of the emerging European data economy, it remains to be seen whether we can speak of a quasi "competition law(s) on data protection" at the Member State level, and what changes the DMA will bring to this. On the ranking issues, the practice of competition authorities with dual jurisdiction (covering both unfair commercial practices and competition law) shows that consumer protection under competition law is also present among the "competing" areas of law.

The technological provisions of the DMA, including interoperability, highlight the fact that new market phenomena and behaviours related to innovation may have *parallel relevance* in the fields of artificial intelligence, cybersecurity and even accessibility. On the corporate compliance side, the identification of parallel relevancies and the clarification of the resulting issues (delimitation of protected subject matter, identification of competent authorities, examination of relevant national and EU case law) can be identified as a further research area.

3.4. CONCLUSIONS AND POTENTIAL USES OF THE RESEARCH

The importance of the DMA, in the author's view, lies also largely in the fact that its enactment has set in motion a "feedback loop" that can, optimally, slowly but steadily increase competition across the digital sector. It is of course an open question at the time of closing this manuscript to what extent this method of managing regulatory uncertainty can be considered a successful one, i.e., a solution that is sufficiently responsive to changes in innovation. A number of questions remain to be answered, including what information should be taken into account when drawing conclusions about iterative changes, what is the optimal time horizon for the feedback mechanism, and what should be the methodology to be used in the feedback mechanism (e.g., whether the Easterbrook theorem should be considered and updated for the approach to the inherent flaws of regulatory interventions).

In this situation, professionals in the emerging field of digital compliance have to accept and overcome the difficulties identified by the lack of a comprehensive interpretative framework for the concept of digital markets and platforms, and be prepared *to channel relevant innovation company experiences into the feedback loop as efficiently as possible.*

Digital compliance should therefore, in addition to its traditional role of the development of internal requirements, also play an increasingly interactive role within the company and the ecosystem(s) affected by the company's operations by preparing relevant feedback responses to innovation. In order to avoid or prevent effective compliance with external regulations from having a negative impact on competitiveness, it becomes a key "self-reflective" task for digital compliance to examine (i) the impact of compliance with existing rules on innovation processes and (ii) how these experiences can be channelled back into the regulation of the digital economy.

The role of digital compliance is therefore not only to translate external expectations into the language of the company and internalise them by building up functioning compliance systems. It also has to be able to translate the complex technological, IT, ICT, micro- and macro-economic issues of strategic importance behind innovation back into the language of law in such a way that their substance is not lost, but the arguments can be managed in the feedback evaluation process. Based on our current state of knowledge, digital compliance can thus make a meaningful contribution to (i) ensuring that regulatory intervention effectively tracks innovation and market developments, thereby (ii) allowing regulation to be tailored to the maximum extent possible to the relevant, effectively identifiable risks, and (iii) ultimately even to a more flexible regulatory approach that is better adapted to the dynamics of the digital economy and can be applied in other areas.

4. LIST OF PUBLICATIONS IN THE SUBJECT MATTER OF THE THESIS

4.1.1 IN ENGLISH

The Legal Framework of Unfair Market Practices in Hungary

In *Law Against Unfair Competition : Towards a New Paradigm in Europe?* (pp. 199-205)

Hilty, Reto M.; Henning-Bodewig, Frauke (ed.) Springer Netherlands pp. 199-205. Springer Netherlands (2007)

Year of publication: 2007

Information Exchange Going Digital – Challenges to Hungarian Competition Law Enforcement

Yearbook of Antitrust and Regulatory Studies, 12(19), 111–138. <https://doi.org/10.7172/1689-9024.yars.2019.12.19.6>

Co-author: Borbála Tünde Dömötörfy

Year of publication: 2019

Antitrust in Data Driven Markets – Hungary

In *Antitrust in Data Driven Markets & Legal Framework for Influencers, Native Advertising and Control over the Use of AI in Marketing* (pp. 171–198).

B. Kilpatrick, P. Kobel, & P. Küllezi (szerk.). Springer International Publishing. https://doi.org/10.1007/978-3-031-07422-6_7.

Co-author: Péter Mezei

Year of publication: 2022

Legal Framework for Influencers, Native Advertising and Control over the Use of AI in Marketing

In *Antitrust in Data Driven Markets & Legal Framework for Influencers, Native Advertising and Control over the Use of AI in Marketing* (pp. 443–457).

B. Kilpatrick, P. Kobel, & P. Küllezi (ed.). Springer International Publishing. https://doi.org/10.1007/978-3-031-07422-6_16

Co-authors: Ádám Liber & Lili Albert

Year of publication: 2022

Gateways to the Internet Ecosystem – Enabling and Discovery Tools in the Age of Global Online Platforms

Yearbook of Antitrust and Regulatory Studies, 15(26). 131–156. <https://doi.org/10.7172/1689-9024.yars.2022.15.26.6>

Co-authors: Dömötörfy Borbála Tünde & Péter Mezei

Year of publication: 2022

Empowering e-consumers – 2022: The year of Hungarian Consumer Law Going Digital?

Conference book of University of Zagreb, 2nd Zagreb International Conference on the Law of Obligations. Routledge, Taylor & Francis Group.

Manuscript accepted for publication

Tudatos fogyasztók nélkül nincs hatékony verseny

Fogyasztóvédelmi szemle, 2(2), 15–20.

Co-author: Pálvölgyi Balázs

Year of publication: 2005

A tisztességtelen versenyt érintő jogharmonizációs folyamat a joggyakorlat tükrében

In *Tisztességtelen verseny – fogyasztóvédelem* (pp. 201–279)

I. Vörös (ed.) *Tisztességtelen verseny – fogyasztóvédelem: Egy európai jogi irányelv átültetésének margójára*, Budapest, MTA Jogtudományi Intézet

Co-authors: Virág Balogh & Krisztina Grimm

Year of publication: 2007

A tisztességtelen kereskedelmi gyakorlatokról szóló irányelv jogharmonizációjának egyes kérdései

In *Tisztességtelen verseny – fogyasztóvédelem* (pp. 321–401)

I. Vörös (ed.) *Tisztességtelen verseny – fogyasztóvédelem: Egy európai jogi irányelv átültetésének margójára*, Budapest, MTA Jogtudományi Intézet

Co-authors: Virág Balogh & Krisztina Grimm

Year of publication: 2007

A versenyjog határterületei: a vevői erő régi és új szabályai

Magyar Jog, 67.(5.), 276–287.

Co-author: Barbara Dávid

Year of publication: 2007

Rangsorolás – új szabályozási igény a platformok és az információs túlterheltség korában

In: *Verseny és szabályozás 2021* (pp 165-201)

P. Valentiny, K. Antal-Pomázi, Cs. I. Nagy, & Z. Berezvai (szerk). KRTK Közgazdaságtudományi Intézet.

Year of publication: 2022

Gun-jumping: a fúziós tranzakciókhoz kapcsolódóan megvalósuló információcsere versenyjogi kérdései

Pázmány Law Working Papers, 2022/4. 1-50.

Year of publication: 2022

Ki fizeti a révést? A konvergens hírközlési szolgáltatók működését meghatározó szabályozási ökoszisztéma aktuális kérdései

In: *Verseny és szabályozás 2022. 266-300.*

P. Valentiny, K. Antal-Pomázi, Cs. I. Nagy, & Z. Berezvai (szerk). KRTK Közgazdaságtudományi Intézet.

Co-authors: Magdolna Csömör & Róbert Ruzsa

Year of publication: 2023

Az interoperabilitásra vonatkozó elvárások a digitális piacok szabályozási kontextusában

In Medias Res, 2023. évi 2. szám

Manuscript accepted for publication

5. ANNEX

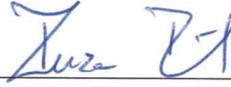
NYILATKOZAT

Alulírottak, dr. Doleschall Andrásné dr. Csömör Magdolna és Ruzsa Róbert, mint a „*Ki fizeti a révést? - A konvergens hírközlési szolgáltatók az átalakuló szabályozási ökoszisztémában*” címmel a KRTK KTI által kiadott „*Verseny és Szabályozás 2022*” című kötetben publikált tanulmány társszerzői akként nyilatkozunk, hogy dr. Firmiksz Judit a tanulmány elkészítéséhez 85%-os szerzőségi arányban járult hozzá. A dr. Firmiksz Judit által „*Adatforradalom – verseny – megfelelés*” címmel írt értekezést megismertük, hozzájárulunk a fenti közös publikáció felhasználásához, és egybehangzóan kijelentjük, hogy az értekezésben foglalt és részben átdolgozott kutatási eredmények a szerző saját eredményeinek minősülnek.

Budapest, 2023. június 28.



dr. Doleschall Andrásné dr. Csömör Magdolna



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