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FOREWORD TO ISSUE 3/2022

The importance and value of technical standards is growing also due to the ever-increasing globalisation of commerce, the rise of new technologies and the necessity for a wider and smoother interoperability among technologies. Technical standards are recognised to play an essential role since they enable users to send, receive and store ever larger quantities of data, and efficiently access, stream or store content online.

The objective of this issue (3/2022), "*Setting Standards: Regulation and Innovation in the Age of Technology*" is to address the nature and role of technical standards – both *de iure standards* by SSOs and *de facto* standards – in the governance of innovation and in particular in the field of new technologies, such as the Artificial Intelligence (AI) and the Information and Communications Technology (ICT). As recognised in the final report on consumer Internet of Things sector inquiry published by the EU Commission in January 2022, *"the use of consumer IoT products is increasingly becoming part of everyday life for Europeans,* [and] *the consumer IoT sector is expected to grow significantly in the coming years*". The growing demand for digital services, the rise of the Internet of Things (IoT) and of Artificial Intelligence applications all imply that more and more products from different manufacturers need to be able to seamlessly 'talk to' each other to provide value to consumers.

In many cases, technical standards require the use of technologies protected by patents. A patent that protects technology which is essential to implementing a standard is known as a Standard Essential Patent (SEP). Without using the methods or devices protected by these SEPs, it is difficult for an "implementer" of the standard to create standard-compliant products, such as smartphones or tablets.

Patents play an important role in creating an ecosystem that encourages and enables businesses to innovate. This principle of rewarding IP owners for their investment characterises the functioning of the patent system as a whole. Competition also plays a crucial role promoting consumer choice and lowering prices as more firms enter the market and today the relationship between competition and innovation is becoming particularly challenging. In many jurisdictions there is indeed a heated debate on how SEPs, cross-licencing agreements practises and patent pools ecosystems are functioning, and whether the current ecosystem strikes the right balance among stakeholders.

Contributions to this issue aimed to address various questions raised using the standards in the field of new technologies. The first deal with the question on whether the AI standards play a role in the context of liability litigation. In answering this important query, the authors start from an analysis of the nature and role that professional standards and norms have in legal relationships, such as contracts and liability actions, highlighting they are substantially normative in spite of their private and voluntary nature and, therefore, they represent the yardstick against which the performance and behaviour of professionals are evaluated from a legal point of view even in the new field of AI.

The second contribution analyses the licensing landscape of standardised technology. After having highlighted that the Standardization has been fundamental to allow interoperability and the worldwide success of new technologies and standardization bodies have the technical and administrative task to choose the best technology made available by innovators who participate in the standardization efforts, the authors offers insights from leading market participants who have engaged in licensing of standard essential patents are developing frameworks to address the challenges of licensing of new technologies, such as IoT, automotive and cellular technologies.

The editors of this issue are Riccardo de Caria, Professor of Comparative Public Law at the University of Turin, Cristina Poncibò, Professor of Comparative Private Law at the University of Turin jointly with Mr Dario Paschetta, LLM, attorney-at-law and coordinator of the scientific activity of the Italian association LES Italy (www.les-italy.cog).

D.P. – R.d.C. – C.P.

***Eduard Fosch-Villaronga*[*] – *Marco Giraudo*[**]**

INNOVATION LETTER

EXPERIMENTING WITH COMPETING TECHNO-LEGAL STANDARDS FOR ROBOTICS

Abstract
There are legitimacy and discriminatory issues relating to overreliance on private standards to regulate new technologies. On the legitimacy plane, we see that standards shift the centralization of regulation from public democratic processes to private ones that are not subject to the rule of law guarantees reviving the discussion on balancing the legitimacy and effectiveness of techno-legal solutions, which only further aggravates this complex panorama. On the discriminatory plane, incentive issues exacerbate discriminatory outcomes over often marginalized communities. Indeed, standardization bodies do not have incentives to involve and focus on minorities and marginal groups because 'unanimity' of the voting means among those sitting at the table, and there are no accountability mechanisms to turn this around. In this letter, we put up some ideas on how to devise an institutional framework such that standardization bodies invest in anticipating and preventing harm to people's fundamental rights.

JEL CLASSIFICATION: K0, O14

Big data has fuelled optimism and excitement about the widespread adoption of automated systems, especially in industrial, farming, retail, logistics, and, lately, care robots. Such a deluge of new technological artifacts reaching the most intimate recesses of people's lives is already shaking up the legal foundations of our societies. Unfortunately, as the pace of technology dramatically accelerates, our understanding of its implications and regulation does not keep pace[1]. On the contrary, current

[*] eLaw Center for Law and Digital Technologies, Leiden University.
[**] Department of Law, University of Turin.
[1] Gary E Marchant, 'The growing gap between emerging technologies and the law' in Gary E Marchant, Braden R Allenby and Joseph R Herkert (eds), *The growing gap between emerging technologies and legal ethical oversight: the*

standards, laws, and proposed regulations have so far failed to frame robotic technology adequately, although they are silently inserted in every possible domain[2].

Public authorities rely on private actors' capacity to develop adequate standards to mitigate the ethical and legal problems, hazards, and concerns posed by robotics[3]. The overtrust in the ability of these private institutions to deliver balanced and legitimate solutions in such domains is exacerbating, rather than simplifying, the regulatory landscape. Letting private parties develop de facto legal rules through technological standards in domains covered by fundamental rights opens the door to instability related to the possible rejection of these practices by the court system[4]. These soft-law instruments are excellent for reaching international agreements in relevant areas, and if harmonized, they are proof of compliance with hard-law instruments. However, it is not equally sure they work to prevent harm to real people in real-use contexts.

There are legitimacy and discriminatory issues relating to overreliance on private standards to regulate new technologies. On the legitimacy plane, we see that standards shift the centralization of regulation from public democratic processes to private ones that are not subject to checks and balances for the official sources of the law[5], reviving the discussion on balancing the legitimacy and effectiveness of what we may call techno-legal solutions[6]. Regarding the discriminatory side, we see knowledge and incentive issues leading to dangerous and unacceptable discriminatory outcomes. The first problem relates to the fact that no one can anticipate how autonomous systems will significantly affect real people's rights and interests when they deviate from the standard abstract subject. This knowledge problem applies to professionals working for standardization bodies who unavoidably suffer from availability bias, the fallacy of composition, and reductionist approaches. They over-concentrate on information and general knowledge to their avail, with little capacity to adapt to the reality of products

pacing problem (Springer Science & Business Media 2011); David Collingridge, *The Social Control of Technology* (St. Martin's Press 1980).

[2] Eduard Fosch-Villaronga, *Robots, Healthcare and the Law: Regulating Automation in Personal Care* (Routledge 2019); Ronald Leenes, Erica Palmerini, Bert-Jaap Koops, Andrea Bertolini, Pericle Salvini and Federica Lucivero, 'Regulatory challenges of robotics: some guidelines for addressing legal and ethical issues' [2017] Law Innovation and Technology 11.

[3] Alan Winfield, 'Ethical standards in robotics and AI' [2019] 2 Nat Electron 46; Eduard Fosch-Villaronga and Angelo Jr Golia, 'The Intricate Relationships between Private Standards and Public Policymaking in the Case of Personal Care Robots. Who Cares More?' in Paolo Barattini, Federico Vicentini, Gurvinder Singh Virk and Tamas Haidegger (eds), *Human-Robot Interaction: Safety, Standardization, and Benchmarking* (CRC Press 2019); Eduard Fosch-Villaronga and Angelo Jr Golia, 'Robots, Standards and the Law. Rivalries between private standards and public policymaking for robot governance' [2019] Computer Law & Security Review 129.

[4] Eduard Fosch-Villaronga, Hadassah Drukarch and Marco Giraudo, 'A legal sustainability approach to align the order of rules and actions in the context of digital innovation', forthcoming in Henrik Saetra (ed) *Technology and Sustainable development. The promise and pitfalls of techno solutionism* (Springer 2023).

[5] Michael Guihot, Anne F Matthew and Nicolas Suzor, 'Nudging robots: Innovative solutions to regulate artificial intelligence' [2019] Vand J Ent & Tech L 385.

[6] Fosch-Villaronga and Golia, 'Robots, Standards and the Law. Rivalries between private standards and public policymaking for robot governance' (n 3).

with increased levels of autonomy and complex interaction with humans, whereby the distinction between practitioners, developers, and designers is challenging and blurry[7].

For instance, ISO 13482:2014 on safety requirements for personal care robots over-focuses on physical safety, which is much easier to grasp regarding possible harmful events. However, physical safety is not the only personal dimension legally protected at the fundamental rights level. The standards neglect other essential aspects like security, privacy, psychological aspects, and diversity, which play a crucial role in robot safety[8]. As a result, the autonomous systems adopting these standards fail to provide adequate protection in the real world when real people are concerned[9].

Also, the standards overfocus on dominant groups of potential users, thus overlooking the rights, needs, and sensibilities of minority groups[10]. For instance, the already mentioned ISO 13482:2014 is problematic because the first edition of the standards stated that 'future editions of this International Standard might include more specific requirements on particular types of personal care robots, as more complete numeric data for different categories of people (e.g., children, elderly, pregnant women).' However, the subsequent edition did not include these and other minorities. However, these reduction approaches can be helpful in the short run because they allow for a workable solution. They are rhetorical figments that profoundly impact real users' safety and personal psychological well-being. The divergence between abstract models of users and real people is not only relevant on a normative level because when real people are harmed, courts will award damages and issue injunctions such as rise costs and dragging profitability of automated systems too reliant on standards alone[11].

Also, incentive issues are exacerbating discriminatory outcomes. To date, standardization bodies do not have the incentives to focus on minorities and marginal groups because there are no accountability mechanisms to ensure their interests and beliefs are considered. Professionals working at standardization bodies are unelected officials. Therefore, they do not have to report to the electorate during general elections,

[7] Philippe N Boucher, Naja Bentzen, Tania Lațici, Tambiama A Madiega, Leopold Schmertzing and Marcin Szczepański, *Disruption by Technology. Impacts on politics, economics and society* (European Parliamentary Research Service 2020); Eduard Fosch-Villaronga, Adam Poulsen, Roger A Søraa and Bart Custers, 'A little bird told me your gender: Gender inferences in social media' [2021] Information Processing and Management 1.

[8] Alberto Martinetti, Peter K Chemweno, Kostas Nizamis and Eduard Fosch-Villaronga, 'Redefining safety in light of human-robot interaction: a critical review of current standards and regulations' [2021] Front Chem Eng; Eduard Fosch-Villaronga, Simone Van der Hof, Christoph Lutz and Aurelia Tamò Larrieux, 'Toy Story or Children Story? Putting children and their rights at the forefront of the Artificial Intelligence revolution' [2021] AI & Society 1.

[9] Karl Gruber, 'Is the future of medical diagnosis in computer algorithms?' [2019] The Lancet Digital Health 1.

[10] Roger A. Søraa and Eduard Fosch-Villaronga, 'Exoskeletons for all: The interplay between exoskeletons, inclusion, gender and intersectionality' [2020] Paladyn Journal of Behavioral Robotics 217; Eduard Fosch-Villaronga, Anto Čartolovni and Robin L Pierce, 'Promoting inclusiveness in exoskeleton robotics: Addressing challenges for pediatric access' [2020] Paladyn Journal of Behavioral Robotics 1.

[11] Eduard Fosch-Villaronga and Michiel Heldeweg '"Regulation, I presume?" said the robot–Towards an iterative regulatory process for robot governance' [2018] Computer Law & Security Review 1258.

whereby minority groups may raise their voices. They are "judgment proof" because they supply de facto legal solutions without any effective and rapid accountability tool.

Legitimacy, knowledge, and incentive problems make the current institutional framework unfit to create standards working for most people and groups involved. Should these cognitive and incentive asymmetries continue, the availability of inadequate reductionist techno-legal standards may favor the widespread adoption of ill-conceived practices while at the same time not protecting users from harm[12].

There is robust consensus as to the fact that something has to be done, but there is no shared idea on the agenda[13]. Rather than tackling such a dysfunctional system, the strategy of *kicking the can down the road* may emerge in a reality check in courts for the industry. They may find themselves trapped in technological ecosystems built upon standards that are eventually proved unfit to deliver on their protective goals[14].

So, one may think of possible ways to address these issues. As to the legitimacy issue, this is political and constitutional and shall be addressed seriously and soon by legislative intervention both at the Member State and EU levels. Suppose there is political consensus that standards play a de facto legislative function in such a sensitive domain as fundamental rights. In that case, political bodies at the highest level shall devise viable solutions to include these rules within the constitutional structure of pluralistic democracies.[15] As to the incentive issue, instead, there are some foundational questions we may start to address as to how we can improve the quality and the fairness of standards under the current constitutional framework.

We may ask ourselves a twofold question. First, how do we create knowledge and information about possible adverse implications of personal care robots - and autonomous systems in general - so they can be used to frame standards? Second, how do we incentivise standard organizations to invest in preventing harm to minority groups regarding their specific beliefs and physical and physiological traits?[16] In other words, how can we imagine an institutional framework with standardization bodies to invest in anticipating and preventing harm to people's fundamental rights?

One good start could clarify whom we want to pay for wrong or incomplete anticipations of robots' adverse effects harming the protected legal interests of people.

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[12] Carlos Calleja, Haddassah Drukarch and Eduard Fosch-Villaronga, 'Harnessing robot experimentation to optimize the regulatory framing of emerging robot technologies' [2022] Data & Policy 1.
[13] Thomas Wischmeyer and Timo Rademacher (eds), *Regulating Artificial Intelligence* (Routledge 2020).
[14] Marco Giraudo, 'Legal Bubbles' in Alain Marciano and Giovanni Ramello (eds), *Encyclopedia of Law and Economics* (2nd edition, Springer 2022).
[15] Fosch-Villaronga and Golia, 'Robots, Standards and the Law. Rivalries between private standards and public policymaking for robot governance' (n 3).
[16] Ido Kilovaty, 'Psychological data breach harms' [2021] North Carolina Journal of Law and Technology 1; Eduard Fosch-Villaronga, '"I love you," said the robot. Boundaries of the use of emotions in human-robot interaction' in Hande Ayanoğlu and Emília Duarte (eds), *Emotional Design in Human-Robot Interaction: Theory, Methods and Application* (Springer 2019).

Under the current regulatory landscape, those paying are the users[17], and possibly producers of personal care robots in the future[18]. In this context, standardization bodies are not accountable for wrong anticipations o ill-conceived risk assessments.

To re-equilibrate the incentive structure, we may want to switch to a more decentralized model whereby competing private entities provide for techno-legal standards. If we want to leverage private ingenuity and ability to come up with standards considering a broader spectrum of legal interests also concerning minorities, we may recur to the creation of a market for them.

Private companies need incentives to invest resources to explore implications for different and small minorities which today do not exist. If a group of possible customers exists, then they may be willing to invest in delivering the proper techno-legal standards. Moreover, they have incentives to do it properly because if they fail to consider some hazards or risks adequately, they have to bear the consequences of these shortcomings or wrong assessments. The possibility of providing standards to those selling automated systems to minorities may foster investments in these niches and favor research to prevent these possible harms proactively[19]. If the techno-legal software fails to protect users and mitigate harm, this will give rise to either product liability or liability towards the professional-client using these standards.

We may call it a market of techno-legal standards whereby private entities sell de facto legal solutions embedded in technological standards to be used as licensed software. In this case, the incentives to invest in preventing harm to real people would spur competition between different private entities to develop better legal-technological standards to anticipate and prevent possible harm, capable of adapting to experience and case law. Of course, the ultimate arbiters of legal-technological standards will be courts and judges assessing them, or not, in case law when establishing liability. Moreover, we may see some standardization bodies go bankrupt because they failed to anticipate and prevent possible harm and how courts will award damages in these cases.

However, the possibility of failure is essential for the competition to deliver on its efficiency promises. A functional market is such that techno-legal standards that are more costly – both in terms of individual and social costs – are filtered out by competition from better alternatives capable of reducing the negative externalities of autonomous systems and robots. The possibility of failure couples with the prospect of reaping the profits of winning the competition in designing techno-legal standards capable of anticipating courts' decisions.

[17] Fosch-Villaronga and Heldeweg (n 11).
[18] Homa Alemzadeh, Jaishankar Raman, Nancy Leveson, Zbigniew Kalbarczyk and Ravishankar K Iyer, 'Adverse Events in Robotic Surgery: A Retrospective Study of 14 Years of FDA Data' [2016] 11 Plos One 1.
[19] Fosch-Villaronga, Čartolovni and Pierce (n 10).

For this to happen, we need to establish an institutional framework providing incentives such as internalizing both benefits and costs of devising techno-legal standards. Legal-technological standards, as software, might be used under licenses and subject to product liability. In this way, we may elicit investment in knowledge production about possible harms to marginal groups and infrequent landscapes, not only to majority groups but also to create a market for standards that is more balanced, inclusive, and efficient. The presence of incentives to anticipate all the costs may favour the competition between legal and technological standards and their adaptation to newly emerging case law across the relevant jurisdictions.

Of course, there is no institutional framework where no one pays. Free lunches do not exist either under central planning or the market economy. Thus, some entities selling techno-legal standards may fail if their solutions do not work and cause unsustainable damage. If their software does not work, they will have to pay compensation and eventually go bankrupt.

Experimenting with market-based regulatory models may favor smoother coevolution between legal rules and industrial practices to avoid air gaps between the policy cycle's speed and technological and social change

Cristina Frattone [*]

REASONABLE AI AND OTHER CREATURES. WHAT ROLE FOR AI STANDARDS IN LIABILITY LITIGATION?

Abstract

Standards play a vital role in supporting policies and legislation of the European Union. The regulation of artificial intelligence (AI) makes no exception as made clear by the AI Act proposal. Particularly, Articles 40 and 41 defer to harmonised standards and common specifications the concrete definition of safety and trustworthiness requirements, including risk management, data quality, transparency, human oversight, accuracy, robustness, and cybersecurity. Besides, other types of standards and professional norms are also relevant to the governance of AI. These include European non-harmonised standards, international and national standards, professional codes and guidelines, and uncodified best practices. This contribution casts light on the relationship between standards and private law in the context of liability litigation for damage caused by AI systems. Despite literature's commitment to the issue of liability for AI, the role of standardisation in this regard has been largely overlooked hitherto. Furthermore, while much research has been undertaken on the regulation of AI, comparatively little has dealt with its standardisation. This paper aims to fill this gap.

Building on previous scholarship, the contribution demonstrates that standards and professional norms are substantially normative in spite of their private and voluntary nature. In fact, they shape private relationships due to normative and economic reasons. Indeed, these private norms enter the courtrooms by explicit or implicit incorporation into contracts as well as by informing general clauses such as reasonableness and duty of care. Therefore, they represent the yardstick against which professionals' performance and conduct are evaluated. Hence, a link between standards, safety, and liability can be established. Against this backdrop, the role of AI standards in private law is assessed. To set the scene, the article provides a bird's-eye view of AI standardisation. The European AI standardisation initiative is analysed along with other institutional and non-institutional instruments. Finally, it is argued that AI standards contribute to defining the duty of care expected from developers and professional operators of AI systems. Hence, they might represent a valuable instrument for tackling the challenges posed by AI technology to extracontractual and contractual liability.

JEL CLASSIFICATION: D82, F23, K12, K13, K24, K41, L15

SUMMARY

[*] Ph.D. Candidate in Comparative Legal Disciplines at Roma Tre University. I am grateful to the anonymous reviewers for their valuable comments and to the participants in the DynamInt Doctoral Forum 'Markets, Governance and European Law in the Algorithmic Era' at Humboldt-University of Berlin for the fruitful discussion.

1 Introduction

Standardisation is the codification of professional knowledge and expertise in a particular field or with regard to specific products and services. Hence, standards are technical specifications and recommendations addressed to professionals. Standards can be issued by international, regional, and national organisations.

Standardisation is a strategic instrument for the governance of highly technical issues. The standardisation process is more agile than law-making procedures, which makes it particularly suited to regulating technologies that evolve at a rapid pace. Moreover, it is market-driven since standards are adopted by qualified experts in the field with the participation of businesses and representatives of non-industrial interests. Notably, standards stand as trade facilitators by creating a level playing field, promoting interoperability,[1] and favouring cost optimisation. At the same time, standardisation is essential to quality assurance in the interest of society as a whole.[2] In fact, standards provide objective and comparable measures of quality and safety. As a result, standards are meant to increase consumer confidence too.[3]

However, standardisation is a double-edged sword. Whereas in principle it is a catalyst for trade, it can also obstruct it.[4] Once standards take root in a given market they might act as a barrier against traders who do not comply with them. Furthermore, standardisation have both negative and positive impacts on innovation.[5] Whilst standardisation attracts investments and encourages the development of specific

[1] Commission, 'An EU Strategy on Standardisation – Setting global standards in support of a resilient, green and digital EU single market' COM (2022) 31 final, 1. See also Regulation (EU) No 1025/2012 of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council [2012] OJ L316/12, Recital 6; Case C-160/20 *Stichting Rookpreventie Jeugd and Others v Staatssecretaris van Volksgezondheid, Welzijn en Sport*, Opinion of AG Saugmandsgaard Øe, para 79.

[2] Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 421-422.

[3] Commission, 'An EU Strategy on Standardisation - Setting global standards in support of a resilient, green and digital EU single market' COM (2022) 31 final, 1.

[4] Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 398 ff.

[5] GM Peter Swann, 'The Economics of Standardization: An Update' (Innovative Economics Limited 2010) Report for the UK Department of Business, Innovation and Skills (BIS) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/32444/10-1135-economics-of-standardization-update.pdf>, 9-12; Knut Blind, 'The Impact of Standardisation and Standards on Innovation' in Jakob Edler and others (eds), *Handbook of Innovation Policy Impact* (Edward Elgar 2016).

technologies, it risks promoting lock-in in outdated technologies,[6] especially in the case of strong network externalities, that is, customers benefitting from the existence of a large network of many other users of the same standard or technology.[7] Finally, it may be challenging to ensure that all goals of are sufficiently achieved. For instance, cost optimisation and interoperability may conflict with quality assurance in some cases. Hence, standardisation must be handled with care.

In addition to standards on goods and services that are formally adopted by standardisation organisations, technical specifications and rules of conduct can be established by stakeholders outside of typical standardisation fora.[8] Professional associations and companies often lay down guidelines and codes of conduct or adopt private certification schemes for goods and services. Furthermore, private contracts, particularly standard form contracts, perform a regulatory function.[9] These guidelines, codes, certifications schemes, and contracts can incorporate standards set by standardisation organisations and/or set different criteria. Therefore, 'formal' and 'informal' standards coexist, and they both contribute to shaping the choices and the behaviour of manufacturers and professionals.

At the European level, standardisation is at the core of the internal market of the European Union ('EU').[10] In the EU framework, standardisation means a mechanism of co-regulation that brings together private and public parties at different stages of decision-making so as to balance different interests.[11] Hence, it refers to the adoption of standards by recognised standardisation organisations. Standards play a vital role in supporting EU policies and legislation and particularly in the context of emerging technologies. The regulation of artificial intelligence (AI) makes no exception.

In its proposal for a regulation on AI (hereinafter, 'AI Act'),[12] the Commission has made it clear that it envisions a prominent role for standards. The AI Act seeks to introduce a complex patchwork of safety and trustworthiness requirements for 'high-risk' AI systems[13] concerning risk management, data quality, transparency, human

[6] ibid.
[7] GM Peter Swann, *The Economics of Innovation: An Introduction* (Edward Elgar 2009), 82 ff.
[8] Marta Cantero Gamito and Hans-W Micklitz (eds), *The Role of the EU in Transnational Legal Ordering* (Elgar 2020).
[9] Dan Wielsch, 'Global Law's Toolbox: How Standards Form Contracts' in Horst Eidenmüller (ed), *Regulatory Competition in Contract Law and Dispute Resolution* (Beck/Hart/Nomos 2013).
[10] Commission, 'An EU Strategy on Standardisation Setting global standards in support of a resilient, green and digital EU single market' COM (2022) 31 final, 1. See also Standardisation Regulation, Recital 5.
[11] Mariolina Eliantonio and Megi Medzmariashvili, 'Hybridity Under Scrutiny: How European Standardization Shakes the Foundations of EU Constitutional and Internal Market Law' (2017) 44 Legal Issues of Economic Integration 323, 324.
[12] Commission, 'Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts' COM (2021) 206 final (hereinafter, 'AI Act').
[13] Pursuant to Article 6 of the AI Act, high risk AI systems include: i) systems that are intended to be used as safety components of a product, or are themselves a product, covered by listed Union harmonisation legislation and

oversight, accuracy, robustness, and cybersecurity. With a view to lowering compliance costs for providers of high-risk AI systems,[14] Articles 40 and 41 establish a presumption of conformity with said requirements for systems that comply with harmonised standards and common specifications.[15] The presumption should incentivise the adoption of these standards and therefore create a virtuous circle.[16] Hence, standards will have a crucial role in providing technical and operational details for the design, development, and deployment of AI technology. Whilst much research has been undertaken on the regulation of AI, comparatively little has dealt with its standardisation.[17] Hence, the focus of the present contribution is on AI standardisation.

Furthermore, the paper deals with the role of AI standards in private law, specifically in liability litigation. Liability for damage caused by AI systems is a mainstream topic for scholarly and policy debate. In particular, the futureproofing of the Directive on liability for defective products[18] (hereinafter, 'PLD') has been questioned.[19] Moreover, the

required by that legislation to undergo a third-party conformity assessment (eg machinery, toys, radio equipment, medical devices, aviation equipment, motor vehicles); ii) applications of AI technologies listed in Annex III to the Regulation, that pose a risk of harm to health and safety, or a risk of adverse impact on fundamental rights (eg biometric identification, creditworthiness assessments, immigration assessments, access to education or employment, law enforcement, safety components for critical infrastructure). By Article 7, the Commission, following stipulated criteria, may add similar systems to the list in Annex III if they pose an equivalent or greater risk of harm to health and safety, or of adverse impact on fundamental rights, than the systems already listed in the Appendix.

[14] Pursuant to Article 3, 'provider' means a natural or legal person, public authority, agency or other body that develops an AI system or that has an AI system developed with a view to placing it on the market or putting it into service under its own name or trademark, whether for payment or free of charge.' As pointed out by Edwards, the definition of provider does not encompass businesses that deploy AI systems that are developed by a third party. As a result, most safety and trustworthiness obligations do not apply to professional users of AI systems according to the Proposal. This differential treatment is not justified though. Moreover, it has negative repercussions for those affected by the operation of an AI system. See Lilian Edwards, 'Regulating AI in Europe: Four Problems and Four Solutions' (Ada Lovelace Institute 2022) <https://www.adalovelaceinstitute.org/report/regulatingai-in-europe/>.

[15] 'Harmonised standards and supporting guidance and compliance tools will assist providers and users in complying with the requirements laid down by the proposal and minimise their costs' (AI Act, Explanatory Memorandum, 6-7).

[16] Mark McFadden and others, 'Harmonising Artificial Intelligence: The Role of Standards in the EU Regulation' (Oxford Commission on AI & Good Governance 2021).

[17] Martin Ebers, 'Standardizing AI: The Case of the European Commission's Proposal for an "Artificial Intelligence Act"' in Larry DiMatteo, Michel Cannarsa and Cristina Poncibò (eds), *The Cambridge Handbook of Artificial Intelligence: Global Perspectives on Law and Ethics* (CUP 2022); Mark McFadden and others, 'Harmonising Artificial Intelligence: The Role of Standards in the EU Regulation' (Oxford Commission on AI & Good Governance 2021); Alessia Monica, 'Regulating AI and the Key-Role of Standard in the Co-Regulation of ICT: EU, Members States and Private Entities' [2021] MediaLaws 145; Michael Veale and Frederik Zuiderveen Borgesius, 'Demystifying the Draft EU Artificial Intelligence Act. Analysing the Good, the Bad, and the Unclear Elements of the Proposed Approach' (2021) 22 Computer L Rev Int'l 97, 104-107. See also Florian Möslein and Roberto V. Zicari, 'Certifying Artificial Intelligence Systems' in Roland Vogl (ed), *Research Handbook on Big Data Law* (Edward Elgar 2021).

[18] Council Directive 85/374/EEC of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products [1985] OJ L210/29.

[19] See Expert Group on Liability and New Technologies – New Technologies Formation, 'Liability for Artificial Intelligence and Other Emerging Technologies' (Commission 2019) <https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupMeetingDoc&docid=36608>; Commission, 'Report on the safety and liability implications of Artificial Intelligence, the Internet of Things and robotics' COM (2020) 64 final. In European scholarship see eg Jean-Sébastien Borghetti, 'How can Artificial Intelligence be Defective?' in

application of established tort law is not straightforward.[20] Notably, it is challenging to determine if, and under what conditions, human operators are liable for damage caused by autonomous[21] AI systems over which they retain little to no control. Suggestively, it has been proposed to replace the 'reasonable person' standard of conduct with a 'reasonable algorithm' standard.[22] In a similar vein, contract liability is not clear-cut when obligations are performed with the support of AI systems.[23]

Ultimately, these concerns triggered two recent legislative initiatives at an EU level in the context of extra-contractual liability. Following a public consultation,[24] the Commission adopted a proposal for an 'AI Liability Directive'[25] and a proposal for a revised 'PLD II.'[26] Specifically, the proposed AI Liability Directive does not aim to establish a full-fledged liability regime for AI-related damage, but it eases the burden of

Sebastian Lohsse, Reiner Schulze and Dirk Staudenmayer (eds), *Liability for Artificial Intelligence and the Internet of Things* (Hart/Nomos 2019); Tiago Sérgio Cabral, 'Liability and Artificial Intelligence in the EU: Assessing the Adequacy of the Current Product Liability Directive' (2020) 27 MJ 615; Martin Ebers, 'Liability for Artificial Intelligence and EU Consumer Law' (2021) 12 JIPITEC 204, 214 ff; Bernhard A Koch, 'Product Liability 2.0 – Mere Update or New Version?', in *Liability for Artificial Intelligence and the Internet of Things*, *cit.*; Piotr Machinowski (ed), *European Product Liability. An Analysis of the State of the Art in the Era of New Technologies* (Intersentia 2016); Daniel Schönberger, 'Artificial Intelligence in Healthcare: A Critical Analysis of the Legal and Ethical Implications' (2019) 27 IJLIT 171; Christian Twigg-Flesner, 'Guiding Principles for Updating the Product Liability Directive for the Digital Age' (European Law Institute 2021); Gerhard Wagner, 'Produkthaftung für autonome Systeme' (2017) 217 AcP 707; *id.*, 'Robot Liability', in *Liability for Artificial Intelligence and the Internet of Things*, *cit.*; Herbert Zech, 'Liability for Autonomous Systems: Tackling Specific Risks of Modern IT', in *Liability for Artificial Intelligence and the Internet of Things*, *cit.*

[20] Cf *ex multis* Jaap Hage, 'Theoretical Foundations for the Responsibility of Autonomous Agents' (2017) 25 Artificial Intelligence and Law 255; Joseph A Cannataci, 'Law, Liability and Expert Systems' (1989) 3 AI & Society 169; Alberto Galasso and Hong Luo, 'Punishing Robots. Issues in the Economics of Tort Liability and Innovation in Artificial Intelligence' in Ajay Agrawal, Joshua Gans and Avi Goldfarb (eds), *The Economics of Artificial Intelligence: An Agenda* (University of Chicago Press 2019); Andrew D Selbst, 'Negligence and AI's Human Users' (2020) 100 B U L Rev 1315; Christiane Wendehorst, 'Strict Liability for AI and Other Emerging Technologies' (2020) 11 JETL 150; Zhao Yan Lee, Mohammad Ershadul Karim and Kevin Ngui, 'Deep Learning Artificial Intelligence and the Law of Causation: Application, Challenges and Solutions' (2021) 30 Information & Communications Technology Law 255; Martin Ebers, 'Civil Liability for Autonomous Vehicles in Germany' (2022) <https://ssrn.com/abstract=4027594> accessed 30 July 2022; David C Vladeck, 'Machines without Principals: Liability Rules and Artificial Intelligence' (2014) 89 Wash L Rev 117.

[21] Cf Simon Chesterman, 'Artificial Intelligence and the Problem of Autonomy' (2020) 210 Notre Dame Journal on Emerging Technologies 210.

[22] Cf Woodrow Barfield, 'Liability for Autonomous and Artificially Intelligent Robots' (2018) 9 Paladyn, Journal of Behavioral Robotics 193; Mark A Lemley and Bryan Casey, 'Remedies for Robots' (2019) 86 U Chi L Rev 1311.

[23] See André Janssen, 'AI and Contract Performance' in Larry DiMatteo, Michel Cannarsa and Cristina Poncibò (eds), *The Cambridge Handbook of Artificial Intelligence: Global Perspectives on Law and Ethics* (CUP 2022); Tycho J de Graaf and Iris S Wuisman, 'Contractual Liability for the Use of AI under Dutch Law and EU Legislative Proposals' in Bart Custers and Eduard Fosch-Villaronga (eds), *Law and Artificial Intelligence: Regulating AI and Applying AI in Legal Practice* (Springer 2022).

[24] 'Civil Liability – Adapting Liability Rules to the Digital Age and Artificial Intelligence' (Have your say) <https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12979-Civil-liability-adapting-liability-rules-to-the-digital-age-and-artificial-intelligence_en> accessed 4 November 2022. Cf Bernhard A Koch and others, 'Public Consultation on Civil Liability. Adapting Liability Rules to the Digital Age and Artificial Intelligence' (European Law Institute 2022).

[25] Commission, 'Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence (AI Liability Directive)' COM (2022) 496 final (hereinafter, 'AI Liability Directive').

[26] Commission, 'Proposal for a Directive of the European Parliament and of the Council on liability for defective products' COM (2022) 495 final (hereinafter, 'PLD II').

proof on plaintiffs by introducing a right to request a court order of disclosure of relevant evidence about high-risk AI systems[27] and rebuttable presumptions of fault[28] and causation.[29] Similar to the AI Liability Directive, the PLD II introduces a duty to disclose relevant evidence[30] and rebuttable presumptions of defectiveness and causation.[31] Furthermore, the PLD II extends the scope of application of EU product liability law to software, such as operating systems, computer programs, and AI systems.[32]

In this regard, courts play a pivotal role in applying tort law to AI-related damage.[33] Indeed, the issuance of an order of disclosure and the application of a presumption depend on the discretionary appreciation of contextual factors, in relation to the technical and scientific complexity of the single case. Moreover, courts will have to set a standard of conduct as a yardstick against which the behaviour of providers, producers, operators, and other actors must be assessed.[34]

Against this backdrop, standards might help deal with uncertainty. Indeed, judges and experts rely on standards for assessing negligence and causation in highly technical cases. Standards also inform general clauses like due diligence. Furthermore, standards enter the courtrooms through contracts. In fact, contractual clauses might refer explicitly to standards that therefore acquire binding force between parties. Moreover, because of their pervasiveness, standards shape private relationships and the expectations of private parties. Hence, they represent the main yardstick against which professionals' behaviour is measured. Accordingly, deviation from standards can constitute evidence of negligence. Notwithstanding their non-binding nature, standards are therefore a precious tool in the hands of stakeholders and courts to mitigate the unclarity of the liability regime of AI. And yet, the role of standards in the context of liability for AI-related damage has been overlooked hitherto. Therefore, the present contribution aims to fill this gap.

The reasoning proceeds in four steps. First, Sections 2 and 3 set the scene with a brief overview of the European standardisation framework and a discussion of the legal nature of standards. Second, Section 4 highlights the relationship between standards and private law. Particularly, it casts light on the link between standards, safety, and liability. Third, Section 5 analyses the role of AI standardisation for AI governance in

[27] AI Liability Directive, Article 3.
[28] AI Liability Directive, Article 3(5). See also Recital 21.
[29] AI Liability Directive, Article 4.
[30] PLD II, Article 8.
[31] PLD II, Article 9. See also Recitals 33 and 34.
[32] PLD II, Article 4, No. 1 and Recitals 12 and 13.
[33] Orian Dheu, Jan De Bruyne and Charlotte Ducuing, 'The European Commission's Approach to Extra-Contractual Liability and AI – A First Analysis and Evaluation of the Two Proposals' (2022) CiTiP Working Paper 2022 <https://ssrn.com/abstract=4239792>, 42.
[34] ibid.

light of the AI Act. Fourth, building on the findings of the previous sections, Section 6 pinpoints the role of AI standards in the context of liability litigation, with a focus on negligence and conformity. Section 7 concludes.

The aim of this paper is twofold. It aims to encourage further research on AI standardisation. Furthermore, it provides motivation for reconsidering the European approach to standardisation. Indeed, the shortcomings of private standards-making in terms of democracy, legitimacy, and transparency are under the spotlight.[35] These concerns are shared by scholars and the Commission. Arguably, they are even more persuasive if standards influence the outcome of private disputes.

2 The European way' to standardisation in a nutshell

Regulation (EU) No 1025/2012 on standardisation (hereinafter, 'Standardisation Regulation')[36] defines standards as written documents adopted by recognised standardisation bodies containing technical specifications on the characteristics of products and services,[37] with which compliance is not mandatory.[38] Depending on the issuing body, the Standardisation Regulation divides them into international, European, and national standards.[39] European standards can be harmonised and non-harmonised standards. Harmonised standards are adopted by European standardisation organisations following a request made by the European Commission.[40] They provide harmonisation insofar as all conflicting national standards ought to be withdrawn after their publication.[41]

[35] Cf Commission, 'Standardisation Package – Report from the Commission to the European Parliament and the Council on the implementation of the Regulation (EU) No 1025/2012 from 2016 to 2020' COM (2022) 30 final; Commission, 'Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) No 1025/2012 as regards the decisions of European standardisation organisations concerning European standards and European standardisation deliverables' COM (2022) 32 final. In the literature cf Pierluigi Cuccuru, 'Regulating by Request: On the Role and Status of the Standardisation Mandate under the New Approach' in Mariolina Eliantonio and Caroline Cauffman (eds), *The Legitimacy of Standardisation as a Regulatory Technique* (Edward Elgar 2020); Harm Schepel, *The Constitution of Private Governance: Product Standards in the Regulation of Integrating Markets* (Hart 2005), 257; Rob van Gestel and Peter van Lochem, 'Private Standards as a Replacement for Public Lawmaking?' in Marta Cantero Gamito and Hans-W Micklitz (eds), *The Role of the EU in Transnational Legal Ordering: Standards, Contracts and Codes* (Edward Elgar 2020); Raymund Werle and Eric J Iversen, 'Promoting Legitimacy in Technical Standardisation' (2006) 2 Science, Technology and Innovation Studies 19, 21.

[36] Regulation (EU) No 1025/2012 of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council [2012] OJ L316/12 [Standardisation Regulation].

[37] Standardisation Regulation, Article 2(4).

[38] Standardisation Regulation, Article 2(1).

[39] ibid.

[40] ibid.

[41] Standardisation Regulation, Article 3(6).

The Standardisation Regulation follows the principles of the New Approach to technical harmonisation and of the New Legislative Framework ('NLF') for the marketing of products. The New Approach was launched by the Council in 1985.[42] It consists of a new regulatory strategy in which legislative instruments and European standards interact to foster the free movement of goods. The core idea is that of complementing top-down legislation with bottom-up regulation.[43] Accordingly, legislative harmonisation is limited to the formulation of 'essential safety requirements' that a product must satisfy to be put on the market.[44] Instead, the definition of detailed technical specifications is entrusted to standardisation organisations by virtue of specific mandates conferred by the Commission.[45] This is in stark contrast to the previous Old Approach to the marketing of goods which was characterised by detailed texts containing all the necessary technical and administrative requirements. The NLF for the marketing of products, adopted in July 2008,[46] builds on the New Approach and completes the overall legislative framework with provisions on conformity assessment, accreditation, and market surveillance.[47] Recently, the responses to the Commission's consultation on the standardisation strategy have revealed that there is overwhelming support for the NLF approach.[48]

Although harmonised standards are not binding on individuals, normative and economic incentives push businesses toward compliance with them. Notably, products that are manufactured in conformity to harmonised standards are presumed to fulfil the essential requirements imposed by EU law.[49] The presumption of conformity performs a twofold function. It promotes the quality and the safety of products in the interest of consumers. At the same time, it provides legal certainty and a level playing field that fosters the free movement of goods since national authorities cannot restrict the trade of products that are in conformity with harmonised standards,[50] in application of the principle of mutual recognition.[51]

[42] Council Resolution of 7 May 1985 on a new approach to technical harmonization and standards [1985] OJ C136/01.
[43] Cf Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 400.
[44] ibid.
[45] ibid.
[46] Regulation (EC) No 764/2008 of 9 July 2008 laying down procedures relating to the application of certain national technical rules to products lawfully marketed in another Member State and repealing Decision 3052/95/EC [2008] OJ L218/21; Decision No 768/2008/EC of the European Parliament and of the Council of 9 July 2008 on a common framework for the marketing of products, and repealing Council Decision 93/465/EEC [2008] OJ L218/82.
[47] Commission, Notice — The 'Blue Guide' on the implementation of EU products rules 2016 [2016] OJ C272.
[48] Cf Mark McFadden and others, 'Harmonising Artificial Intelligence: The Role of Standards in the EU Regulation' (Oxford Commission on AI & Good Governance 2021), 14 and references therein.
[49] ibid.
[50] ibid.
[51] Consolidated Version of the Treaty on the Functioning of the European Union [2012] OJ C326/47, Articles 34-36; Regulation (EU) No 2019/515 of the European Parliament and of the Council of 19 March 2019 on the mutual recognition of goods lawfully marketed in another Member State and repealing Regulation (EC) No 764/2008 [2019]

Notably, the Standardisation Regulation extended the New Approach to services. Article 1 states clearly that the Standardisation Regulation disciplines the establishment of European standards and of European standardisation deliverables[52] 'for products and for services,' thus providing a legal basis for standardisation of services.[53] Standards for services are substantially different from standards for goods though.[54] Whereas standards for goods consist of highly technical specifications on sizes and materials, standards for services concern contractual obligations and social interaction between the provider and the customer.[55] Therefore, the intertwinement between technical standards and private law is even tighter for services than for products.[56] Indeed, considering that service standards touch upon contractual obligations, non-compliance with them can easily trigger contractual remedies such as contract termination.[57]

Focusing on European standards, they are developed by private international non-profit organisations, the European Standardisation Organisations (ESOs), namely the European Committee for Standardization (CEN), the European Committee for Electrotechnical Standardization (CENELEC), and the European Telecommunications Standards Institute (ETSI). Amidst European standards, those that have been formally requested and validated by the Commission are also harmonised standards.[58] References to harmonised standards are published in the Official Journal of the European Union ('OJ') by the Commission after verifying their compliance with EU law.[59] From this moment on, the Member States and national standardisation bodies are obliged to withdraw all conflicting national standards for the sake of harmonisation.[60]

In theory, compliance with harmonised standards is voluntary. Whilst compliance with legal essential requirements is presumed in case of conformity to harmonised

OJ L91/1. See Case C-120/78 *Rewe-Zentral v Bundesmonopolverwaltung für Branntwein* [1979] ECR 649 [Cassis de Dijon]. On the potentially quantitative restrictive effect of national standardisation and certification activities see Case C-171/11 *Fra.bo SpA v Deutsche Vereinigung des Gas- und Wasserfaches eV (DVGW) — Technisch-Wissenschaftlicher Verein* [2012] ECR I-176, paras 27-32.

[52] 'European standardisation deliverable' means any other technical specification than a European standard, adopted by an ESO for repeated or continuous application. Like European standards, European standardisation deliverables are voluntary. Cf Standardisation Regulation, Article 2(2).

[53] Barend van Leeuwen, *European Standardisation of Services and Its Impact on Private Law: Paradoxes of Convergence* (Bloomsbury Publishing 2017), 49.

[54] Cf Standardisation Regulation, Recital 10, stating that the distinction between goods and services is blurred nowadays so 'it is not always possible to clearly distinguish standards for products from standards for services'.

[55] See Christoph Busch and Simon Reinhold, 'Standardisation of Online Dispute Resolution Services: Towards a More Technological Approach' (2015) 4 EuCML, 50-58; Hans-W. Micklitz, 'The Service Directive: Consumer Contract Law Making via Standardisation', in Aurelia Colombi Ciacchi and others (eds), *Haftungsrecht im dritten Millennium – Liability in the Third Millennium (Liber Amicorum Gert Brüggemeier)* (Nomos 2009), 454.

[56] Cf Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 421-422.

[57] ibid.

[58] Proposals for harmonised standards can also be submitted to ESOs by national standardisation organisations.

[59] Standardisation Regulation, Article 10.

[60] Standardisation Regulation, Article 3(6).

standards, manufacturers and providers are always free to deviate from said standards, as long as they dispose of alternative means to demonstrate compliance with EU law. The facts tell a different story though. Providing alternative evidence of compliance with EU law is so expensive and time-consuming that professionals cannot 'opt out' of harmonised standards without incurring significant further costs.[61] In some cases, market access is even contingent on compliance with a certain standard.[62]

While harmonised standards are drafted by private entities, they must adhere to the essential safety requirements laid down by EU law.[63] Furthermore, the ESOs are under tight control and supervision by the Commission, which initiates, manages, and monitors the entire procedure, and finally decides on the publication in the OJ.[64] Hence, the European approach to standardisation embraces the paradigm of 'proceduralization'[65] and establishes a dialectical relation between private autonomy and public rules. The State recognizes the potential of private standards-making. At the same time, it frames the exercise of this normative power within procedural rules and requirements that force private rule makers to consider public interest.[66] However, it is worth noting that the supervisory role of the Commission is contested[67] both in terms of efficacy, due to its lack of sector-specific expertise, and in terms of efficiency, due to the increased complexity brought in the standards-making process by tight control mechanisms.[68] Furthermore, scholars have denounced the constitutional

[61] Rob van Gestel and Peter van Lochem, 'Private Standards as a Replacement for Public Lawmaking?' in Marta Cantero Gamito and Hans-W Micklitz (eds), *The Role of the EU in Transnational Legal Ordering: Standards, Contracts and Codes* (Edward Elgar 2020), 31-32; Raymund Werle and Eric J Iversen, 'Promoting Legitimacy in Technical Standardisation' (2006) 2 Science, Technology and Innovation Studies 19, 21.
[62] Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 421-422.
[63] Case C-613/14 *James Elliott Construction Limited vs Irish Asphalt Limited* [2016] ECR I-821, para 43.
[64] ibid.
[65] The expression is borrowed from Wielsch who adopts it in the context of regulatory competition between public and private norms in the regulation of contracts: Dan Wielsch, 'Global Law's Toolbox: How Standards Form Contracts' in Horst Eidenmüller (ed), *Regulatory Competition in Contract Law and Dispute Resolution* (Bloomsbury 2013), 104.
[66] ibid.
[67] For a critique and a suggestion of alternative rule-making and certification schemes, see Rob van Gestel and Peter van Lochem, 'Private Standards as a Replacement for Public Lawmaking?' in Marta Cantero Gamito and Hans-W Micklitz (eds), *The Role of the EU in Transnational Legal Ordering: Standards, Contracts and Codes* (Elgar 2020).
[68] Cf Pierluigi Cuccuru, 'Regulating by Request: On the Role and Status of the Standardisation Mandate under the New Approach' in Mariolina Eliantonio and Caroline Cauffman (eds), *The Legitimacy of Standardisation as a Regulatory Technique* (Edward Elgar 2020). Cuccuru makes the point that the Commission lacks technical expertise and proximity to industry comparable to those of ESOs. This seriously undermines its ability to substantially contest ESOs' standards. Moreover, Cuccuru contends that the ESOs have a pervasive influence on the drafting of the very same Commission's mandates which are meant to set a framework for their activity.

shortcomings[69] of standardisation as well as the limits of judicial oversight,[70] sometimes proposing alternative regulatory models.[71]

As to the legal nature of harmonised standards, the Standardisation Regulation is silent. Indeed, it does not clarify whether harmonised standards are part of EU law or not. Their legal nature has been puzzled by the ruling of the Court of Justice (hereinafter, 'CJEU' or 'the Court') in the landmark case *James Elliott Construction Ltd. and Irish Asphalt Ltd.*[72] ('*James Elliott*') of 2016. In *James Elliott*, the CJEU stated that harmonised standards are part of EU law and thus fall within the interpretative jurisdiction of the Court under Article 267 TFEU. Subjection to the Court's jurisdiction has been affirmed not to jeopardise the uniformity of EU law. Notwithstanding the fact that harmonised standards are not acts of the EU *per se*, they produce legal effects in the internal market since compliance with them permits the circulation of products and services.[73] Therefore, harmonised standards are 'necessary implementation measures' of provisions of EU law on essential requirements.[74] Hence, the need to prevent different national authorities from attributing dissimilar meanings to harmonised standards.[75] Furthermore, the standards-making power of ESOs is substantially and formally

[69] See Case C-9/56 *Meroni & Co., Industrie Metallurgiche, SpA v High Authority of the European Coal and Steel Community* [1958] ECR 133. According to the *Meroni* formula, in the EU system delegation of rule-making powers is allowed only if they are of a purely executive nature, if appropriate procedural guarantees are in place, and if judicial review of delegates' decisions is ensured. For a critique of the New Approach framework in light of the Meroni doctrine see Takis Tridimas, 'Community Agencies, Competition Law, and ECSB Initiatives on Securities Clearing and Settlement' (2009) 28 YEL 216. See also Eric J Iversen, Thierry Vedel and Raymund Werle, 'Standardization and the Democratic Design of Information and Communication Technology' (2004) 17 Knowledge, Technology & Policy 104; Olia Kanevskaia, 'ICT Standards Bodies and International Trade: What Role for the WTO?' (2022) 56 JWT 429. For proposals of alternative regulatory models see Rob van Gestel and Hans-W Micklitz, 'European Integration through Standardization: How Judicial Review Is Breaking down the Club House of Private Standardization Bodies' (2013) 50 CML Rev 145.

[70] See Pierluigi Cuccuru, 'The Public and Private Sides of Harmonized Standards: *James Elliott Construction v. Irish Asphalt*' (2018) 19 German LJ 1399.

[71] Harm Schepel, *The Constitution of Private Governance: Product Standards in the Regulation of Integrating Markets* (Hart 2005), 257; Rob van Gestel and Peter van Lochem, 'Private Standards as a Replacement for Public Lawmaking?' in Marta Cantero Gamito and Hans-W Micklitz (eds), *The Role of the EU in Transnational Legal Ordering: Standards, Contracts and Codes* (Edward Elgar 2020).

[72] Case C-613/14 *James Elliott Construction Limited vs Irish Asphalt Limited* [2016] ECR I-821 (hereinafter, 'James Elliott'). For comments on the decision see eg Pierluigi Cuccuru, 'The Public and Private Sides of Harmonized Standards: *James Elliott Construction v. Irish Asphalt*' (2018) 19 German LJ 1399; Mariolina Eliantonio, 'Judicial Control of the EU Harmonized Standards: Entering a Black Hole?' (2017) 44 Legal Issues of Economic Integration 399; Mariolina Eliantonio and Carlo Colombo, 'Harmonized Technical Standards as Part of EU Law: Juridification with a Number of Unresolved Legitimacy Concerns?' (2017) 24 MJ 323; Kai P Purnhagen, 'Voluntary "New Approach" Technical Standards are Subject to Judicial Scrutiny by the CJEU! – The Remarkable CJEU judgment "Elliott" On Private Standards' (2017) 8 EJRR 586; Carlo Tovo, 'Judicial Review of Harmonised Standards: Changing the Paradigms of Legality and Legitimacy of Private Rulemaking under EU Law' (2018) 55 CML Rev 1187; Arnaud van Waeyenberge and David Restrepo Amariles, '*James Elliot Construction*: A "New(ish) Approach" to Judicial Review of Standardisation' (2017) 42 EL Rev 882; Annalisa Volpato, 'The Harmonized Standards before the ECJ: *James Elliott Construction*' (2017) 54 CML Rev 591.

[73] *James Elliott*, paras 38-42; Case C-613/14 *James Elliott Construction Limited vs Irish Asphalt Limited* [2016] ECR I-821, Opinion of AG Campos Sánchez-Bordona EU:C:2016:63, para 61.

[74] *James Elliott*, para 43. Cf Case C-192/89 *Sevince v Staatssecretaris van Justitie* [1990] ECR I-3461, para 10; Case C-188/91 *Deutsche Shell AG v Hauptzollamt Hamburg-Harburg* [1993] ECR I-363, para 17.

[75] Cf *James Elliott*, para 34.

limited. Indeed, the content of standards is framed by legal essential requirements.[76] Moreover, from an institutional angle, the adoption of harmonised standards is required and strictly monitored by the Commission.[77] Hence, the exercise of private standards-making power is subject to substantial and procedural constraints. In light of the above, harmonised standards are substantially part of EU law and thus subject to the interpretative jurisdiction of the Court.

However, it must be noted that the Court did not deny that harmonised standards are voluntary private rules. On the contrary, they are private rules by virtue of their issuing institutions, the ESOs, that are private organisations and not institutions, bodies, offices, or agencies of the Union.[78] The fact that ESOs act under the mandate and the supervision of the Commission does not alter their private nature. This is especially true in light of the limited role of public oversight over ESOs, which is largely replaced by private third-party monitoring. Moreover, no sanctions under public law are inflicted on ESOs in case of non-compliance with standardisation requests issued by the Commission.[79] Finally, harmonised standards are voluntary rules since they are not binding.[80] Arguably, harmonised standards should be regarded as part of EU law only for the purposes of Article 267 of the Treaty on the Functioning of the European Union[81] ('TFEU').[82] In the *James Elliott* ruling, the CJEU equated harmonised standards to acts of the EU to establish its interpretative jurisdiction under Article 267 on them. Yet, the Court has not clarified whether it is entitled to rule on their validity too. For instance, the Court may rule on the validity of the Commission's Implementing Decision, that authorises their publication in the OJ, as a means of indirectly controlling the validity of harmonised standards.[83] Indeed, the Court did not push it to state that harmonised standards are acts of the Union.[84] Instead, the CJEU ruled out this possibility due to the

[76] *James Elliott*, paras 33 and 43.
[77] *James Elliott*, paras 36-37 and 43-47.
[78] *James Elliott*, para 34.
[79] Cf Commission, 'Vademecum on European standardisation in support of Union legislation and policies' SWD (2015) 205 final, Part I, 10; Pierluigi Cuccuru, 'Regulating by Request: On the Role and Status of the Standardisation Mandate under the New Approach' in Mariolina Eliantonio and Caroline Cauffman (eds), *The Legitimacy of Standardisation as a Regulatory Technique. A Cross-disciplinary and Multi-level Analysis* (Edward Elgar 2020), 57.
[80] Standardisation Regulation, Article 2(1).
[81] Consolidated Version of the Treaty on the Functioning of the European Union [2012] OJ C326/47 [TFEU].
[82] In the words of AG Campos Sánchez-Bordona: 'harmonised technical standards [...] should be regarded as 'acts of the institutions, bodies, offices or agencies of the Union' for the purposes of Article 267 TFEU' (*James Elliott*, *cit.*, Opinion of AG Campos Sánchez-Bordona, para 40). This argument is also made in a report commissioned by the German Federal Ministry for Economic Affairs and Energy (BMWi): Kathrin Dingemann and Matthias Kottmann, 'Legal Opinion on the European System of Harmonised Standards' (BMWi 2020) <https://www.bmwi.de/Redaktion/EN/Downloads/L/legal-opinion-on-the-european-system-of-harmonised-standards.pdf?__blob=publicationFile&v=3>.
[83] Cf Arnaud van Waeyenberge and David Restrepo Amariles, '*James Elliot Construction*: A "New(ish) Approach" to Judicial Review of Standardisation' (2017) 42 European Law Review 882, 891 f. The Authors suggest adopting a similar approach to the one used for preliminary rulings on international treaties.
[84] Cf Pierluigi Cuccuru, 'The Public and Private Sides of Harmonized Standards: *James Elliott Construction v. Irish Asphalt*' (2018) 19 German LJ 1399, 1403-1405.

private nature of their issuing institutions. While Advocate General Campos Sánchez-Bordona did say that harmonised standards are acts of the Union in his opinion, he also specified that the equation was 'for the purposes of Article 267 TFEU.'[85] Such a statement might open to the possibility of the Court's scrutiny over the validity of harmonised standards too. Instead, the CJEU adopted a more cautious approach by stressing that the case at hand concerned only its interpretative jurisdiction. Whereas such an issue deserves in-depth analysis, for the purposes of this study it suffices to reaffirm that harmonised standards are voluntary private rules that have legal effects in the EU internal market.

It must be stressed that standards other than harmonised standards are also vital to European standardisation. Only conformity to harmonised standards, ie standards mandated by the Commission and published in the OJ, triggers the presumption of compliance with essential safety requirements. However, all types of European standards have an impact on private law. For instance, European standards acquire legal force between parties if they are explicitly or implicitly incorporated into contracts, regardless of their harmonised or non-harmonised character. Furthermore, they inform general clauses like due diligence. Contracts and case-law thus contribute to the diffusion of European standards. Therefore, harmonisation via European standards can occur top-down by means of an act of the Commission—namely, publication of harmonised standards in the OJ—or bottom-up by virtue of private autonomy or judicial interpretation.[86]

Finally, it is worth noting that EU law can incorporate standards, including non-European standards, and make them mandatory. Accordingly, in the recent *Stichting Rookpreventie* case,[87] the Court upheld a provision of EU law that obliged manufacturers of tobacco products to comply with international standards on the measurement of tar, nicotine, and carbon monoxide emissions. The Court, therefore, stated that references to international standards are valid insofar as their addressees have access to the official and authentic version of the referred standards.[88]

3 The legal nature of standars

[85] *James Elliott*, Opinion of AG Campos Sánchez-Bordona, para 40 as quoted in fn 82. Cf Pierluigi Cuccuru, 'The Public and Private Sides of Harmonized Standards: *James Elliott Construction v. Irish Asphalt*' (2018) 19 German LJ 1399, 1403-1405.
[86] Marta Cantero Gamito, 'The Role of the EU in the Transnational Governance of Standards, Contracts and Codes' in Hans-W Micklitz and Marta Cantero Gamito (eds), *The Role of the EU in Transnational Legal Ordering* (Edward Elgar Publishing 2020); Mariolina Eliantonio and Annalisa Volpato, 'The Contradictory Approach of the CJEU to the Judicial Review of Standards: A Love–Hate Relationship?' in Mariolina Eliantonio and Caroline Cauffman (eds), *The Legitimacy of Standardisation as a Regulatory Technique. A Cross-disciplinary and Multi-level Analysis* (Edward Elgar 2020).
[87] Case C-160/20 *Stichting Rookpreventie Jeugd and Others v Staatssecretaris van Volksgezondheid, Welzijn en Sport* [2022] EU:C:2022:101 [Stichting Rookpreventie].
[88] *Ivi*, para 52.

Professional knowledge and expertise shape a variety of written and unwritten rules of conduct, including standards. In a nutshell, standards are protocols that contain technical specifications and practical recommendations around which significant consensus has been reached in the relevant professional community. They are delivered by private organisations in the form of documents concerning best practices, guidance for deployment, or specifications for interoperability at the physical, network, or application level.[89] In addition to these 'formal' standards, technical know-how and behavioural rules are also provided by guidelines and codes of conduct laid down by professional associations and companies or embedded into private certification schemes.

Standards are not mandatory. They are issued by private entities and thus they do not represent State-made laws. Rather, they are voluntary private rules from an institutional standpoint. However, there is more than meets the eye. Notably, the distinction between 'institutional' technical regulation and private norms is blurred when voluntary standards and good practices are converted into mandatory requirements, either by virtue of law or by reason of market forces.[90] Indeed, market preferences might compel traders to conform to standards in order to be competitive.[91] Furthermore, law provisions can refer to standards when imposing obligations on individuals and thus make them binding.[92] For instance, Article 4(1) of Directive 2014/40/EU[93] prescribes that cigarettes' emissions must be measured in accordance with the methods arising from given ISO standards. As recently confirmed by the CJEU in the above-mentioned *Stichting Rookpreventie* case, referred standards are binding on undertakings by virtue of their incorporation into an act of EU law.[94]

In other cases, State law refers to standards and good practices without making them mandatory. For instance, several provisions of EU law establish presumptions of legal conformity for products and services in conformity with harmonised standards. This saves businesses time and resources that they would otherwise spend on conformity assessments. Hence, they tend to comply with standards spontaneously in order to benefit from said presumptions. Moreover, the law can assign standards an evidential

[89] Mark McFadden and others, 'Harmonising Artificial Intelligence: The Role of Standards in the EU Regulation' (Oxford Commission on AI & Good Governance 2021), 10.
[90] Olia Kanevskaia, 'ICT Standards Bodies and International Trade: What Role for the WTO?' (2022) 56 JWT 429, 436 and references therein.
[91] Fabrizio Cafaggi, 'New Foundations of Transnational Private Regulation' (2011) 38 JL & Soc'y 20, 22.
[92] Cf *James Elliott*; *Stichting Rookpreventie*, para 44.
[93] Directive 2014/40/EU of the European Parliament and of the Council of 3 April 2014 on the approximation of the laws, regulations and administrative provisions of the Member States concerning the manufacture, presentation and sale of tobacco and related products and repealing Directive 2001/37/EC [2014] OJ 2014 L127/1.
[94] *Stichting Rookpreventie*, para 52. However, since said standards have not been published in the OJ, they are not binding on the public generally, but only on undertaking that have access to them: see *ivi*, para 51 and CJEU, 'Judgment of the Court of Justice in Case C-160/20 *Stichting Rookpreventie Jeugd and Others*' (22 February 2022) Press Release No 29/22 <https://curia.europa.eu/jcms/upload/docs/application/pdf/2022-02/cp220029en.pdf>.

role. For instance, Italian Law No. 24/2017 on the liability of healthcare professionals[95] states that doctors can invoke their compliance with guidelines and best practices in their defence pleas. Vice versa, if they deviate from said recommendations, they need to demonstrate that their choice was justified by the specific circumstances of the case, according to a 'comply or explain' approach.[96]

Besides, bottom-up processes contribute to attributing normative force to standards and professional norms. Indeed, compliance with these private rules is often imposed by market participants, such as customers demanding certain product specifications.[97] More importantly, standards and professional norms can be incorporated into contracts and thus be binding on parties. In the exercise of their freedom of contract, parties can in fact agree that performance must fulfil certain requirements laid down by the referred private norms. Absent any explicit reference in the text of the contract, standards and good practices can still play an evidential role in contractual cases.[98] If the defendant is a professional then the plaintiff can argue that abiding by relevant standards is implicitly part of the obligation assumed with the contract. Moreover, standards and good practices inform general clauses like the duty of care and reasonableness. For instance, the above-mentioned Italian law on healthcare has done nothing but codify established case law on the relevance of professional norms in the assessment of medical liability.[99] Furthermore, domestic courts even recognise standards and professional norms as customary law.[100]

In some cases, standardisation is 'procedimentalised' by the law and thus represents a hybrid between public and private rule-making. For instance, EU law disciplines

[95] *Legge 8 marzo 2017 n. 24* 'Disposizioni in materia di sicurezza delle cure e della persona assistita, nonché in materia di responsabilità professionale degli esercenti le professioni sanitarie' in *Gazzetta Ufficiale* n. 64/2017. Law No. 24/2017 is usually referred to as 'Legge Gelli-Bianco.'

[96] For comments on the Italian Law No. 24/2017 see eg Francesca Di Lella, '*Leges artis* e responsabilità civile sanitaria' [2018] NGCC 264; Laura Maria Franciosi, 'The New Italian Regime for Healthcare Liability and the Role of Clinical Practice Guidelines: A Dialogue among Legal Formants' (2018) 11 Journal of Civil Law Studies 371.

[97] On the influence of market forces on the diffusion of international standards see Tim Büthe, 'Engineering Uncontestedness? The Origins and Institutional Development of the International Electrotechnical Commission (IEC)' (2010) 12 Business and Politics 1, 2.

[98] Barend van Leeuwen, *European Standardisation of Services and Its Impact on Private Law : Paradoxes of Convergence* (Bloomsbury Publishing 2017), 154 f., 169.

[99] Massimo Franzoni, 'Colpa e linee guida' [2016] *Danno e responsabilità* 801, 805. The Author makes the point that medical guidelines and *leges artis* have always entered the courtrooms through experts' opinions.

[100] Fabrizio Cafaggi, 'New Foundations of Transnational Private Regulation' (2011) 38 J L & Soc'y 20, 22. Cf Jorge L Contreras, 'Private Law, Conflict of Laws, and a *Lex Mercatoria* of Standards-Development Organizations' (2019) 27 ERPL 245, who stresses the lack of uniformity among judicial interpretation of standards by domestic courts. Customary law, particularly international customary law, is considered part of *lex mercatoria* in the literature. *Lex mercatoria* has been the object of lively scholarly discussion. Particularly, it is debated whether *lex mercatoria* constitutes an autonomous legal order or not. Additionally, scholars who answer this question in the positive have different opinions about what counts as *lex mercatoria* and what its sources are. For an introductory overview see Phillip Hellwege, '*Lex Mercatoria*' in Jürgen Basedow, Klaus J Hopt and Reinhard Zimmermann (eds), *Max Planck Encyclopedia of European Private Law* (Oxford University Press 2012) 1086. Cf Ralf Michaels, 'The True Lex Mercatoria: Law Beyond the State' (2007) 14 Ind J Global Legal Studies 447.

composition, representation, and voting rights of standards makers with a view to ensuring democracy, legitimacy, authority, independence, and reliability. Besides, consultation with stakeholders can be required to guarantee that their interests are taken into account. Standardisation might also be constrained *ex ante* by limits set in formal standards requests and/or subject to *ex post* validation by public authorities. In turn, the institutional facets of standards makers provide further justification for the normative character of standards.[101] Finally, standards are highly authoritative as standards-making bodies are composed of qualified experts in their field. Hence, they have a strong persuasive force.

In light of the foregoing, it can be argued that standards and good practices have strong normative power. In spite of being soft law,[102] they are akin to State-made law from a functional perspective.[103] Albeit standards and good practices are umbrella terms for a heterogeneous group of sources, it can be safely affirmed that altogether they shape national and cross-border relationships between private parties. Notably, they influence significantly the behaviour of private parties.[104] As a consequence, they are deeply intertwined with private law.[105] In light of the above, standards and professional norms constitute a transnational[106] legal order according to Halliday's and Shaffer's definition, which is a collection of formalized legal norms and associated organisations and actors, including any social formation and network, that authoritatively order the understanding and practice of law across national jurisdictions.[107]

[101] Olia Kanevskaia, 'ICT Standards Bodies and International Trade: What Role for the WTO?' (2022) 56 JWT 429, 432.
[102] In its broadest scope, soft law encompasses 'all regulatory instruments and mechanisms of governance that, while implicating some kind of normative commitment, do not rely on binding rules or on a regime of formal sanctions' (Anna Di Robilant, 'Genealogies of Soft Law' (2006) 54 Am J Comp L 299, 299).
[103] See Marta Cantero Gamito, 'The Role of the EU in the Transnational Governance of Standards, Contracts and Codes' in Hans-W Micklitz and Marta Cantero Gamito (eds), *The Role of the EU in Transnational Legal Ordering* (Edward Elgar Publishing 2020); Rob van Gestel and Peter van Lochem, 'Private Standards as a Replacement for Public Lawmaking?' in *id.*
[104] Dan Wielsch, 'Global Law's Toolbox: How Standards Form Contracts' in Horst Eidenmüller (ed), *Regulatory Competition in Contract Law and Dispute Resolution* (Beck/Hart/Nomos 2013), 76.
[105] Cf Eduard Fosch Villaronga and Angelo Jr Golia, 'Robots, standards and the law: Rivalries between private standards and public policymaking for robot governance' (2019) 35 CLSRV 129, 129-133.
[106] For an excellent overview of the different theories on transnational law see Gregory Shaffer, 'Theorizing Transnational Legal Ordering' (2016) 12 Annual Review of Law and Social Science 231 and references therein. In his seminal work 'Transnational Law', Jessup gave a broad definition of transnational law as including traditional public and international public law: Philip C Jessup, *Transnational Law* (Yale University Press 1956). Cf Fabrizio Cafaggi, 'The Many Features of Transnational Private Rulemaking: Unexplored Relationships between Custom, *jura mercatorum* and Global Private Regulation' (2015) 36 U Pa J Int'l L 101; Gralf-Peter Calliess and Peer Zumbansen, *Rough Consensus and Running Code: A Theory of Transnational Private Law* (Hart 2010); Roger Cotterell, 'What Is Transnational Law?' (2012) 37 Law & Social Inquiry 500; Terence C Halliday and Gregory Shaffer (eds), *Transnational Legal Orders* (Cambridge University Press 2015); Ralf Michaels, 'The True *lex mercatoria*: Law beyond the State' (2007) 14 Ind J Global Legal Studies 447; Peer Zumbansen, 'Transnational law, evolving' in Jan Smits (ed), *Elgar Encyclopedia of Comparative Law* (2nd edn, Edward Elgar 2012).
[107] Terence C Halliday and Gregory Shaffer, 'Transnational Legal Orders' in *id.*, *Transnational Legal Orders* (CUP 2015).

As repeatedly pointed out by scholars, modern legal systems are composed of plural normative systems.[108] Particularly, public institutions and norms co-exist with private and mixed ones.[109] Therefore, next to State-made law there are sector-specific normative orders 'crafted' by private entities and tailored to identified businesses and industries.[110] Key actors of these private orders are non-governmental organisations, multinational corporations, consulting firms, law firms, and financial institutions.[111] The expertise of these private regulators stands as a guarantee of the quality of rule-making.

The downside is that standardisation is largely dominated by industry and thus might not take sufficiently into account societal needs.[112] This is of utmost relevance to our analysis. Indeed, private regulation is likely to affect the governance of AI with particular intensity. Similar to other regulated technologies, its governance requires a high level of technical expertise. However, what makes the governance of AI unique is perhaps the ubiquity of the technology in the public and private spheres and its impact

[108] See eg Paul Schiff Berman, 'The New Legal Pluralism' (2009) 5 Annual Review of Law and Social Science 225; Ralf Michaels, 'Global Legal Pluralism' (2009) 5 Annual Review of Law and Social Science 243; Rodolfo Sacco, 'Legal Formants: A Dynamic Approach to Comparative Law' (1991) 39 Am J Comp L 1. According to Teubner's theory of 'global law without a State', today's legal systems are not hierarchical but heterarchical. It stems from this that decentralised law, including *lex mercatoria*, standards, and professional self-regulation, is not only normative but amounts also to positive law. See eg, Gunther Teubner, 'Global Bukowina: Legal Pluralism in the World Society', in *id.* (ed), *Global Law Without a State* (Dartmouth Gower 1997); *id.*, 'The King's Many Bodies: The Self-Deconstruction of Law's Hierarchy' (1997) 31 L & Soc'y Rev 763; *id.*, 'Breaking Frames. Economic Globalization and the Emergence of *lex mercatoria*' (2002) 5 European Journal of Social Theory 199, 206-208. For a different view of private normative rules as 'law beyond the State' and not 'law without the State' see Ralf Michaels, 'The True *lex mercatoria*: Law beyond the State' (2007) 14 Ind J Global Legal Studies 447.

[109] Kenneth W Abbott & Duncan Snidal, 'International Regulation without International Government: Improving IO Performance through Orchestration' (2010) 5 The Review of International Organizations 315. Cf Fabrizio Cafaggi, 'New Foundations of Transnational Private Regulation' (2011) 38 J L & Soc'y 20.

[110] Dan Wielsch, 'Global Law's Toolbox: How Standards Form Contracts' in Horst Eidenmüller (ed), *Regulatory Competition in Contract Law and Dispute Resolution* (Beck/Hart/Nomos 2013), 72 f.

[111] ibid. See also See eg, Anna Beckers, 'Regulating Corporate Regulators through Contract Law? The Case of Corporate Social Responsibility Codes of Conduct' (2016) EUI Working Paper MWP 2016/12; Florian Möslein, 'Legal Innovation in European Contract Law: Within and Beyond the (Draft) Common Frame of Reference' (2009) EUI Working Paper RSCAS 2009/07; *id.*, 'Regulatory Competition between Public and Private Rules' in Horst Eidenmüller (ed), *Regulatory Competition in Contract Law and Dispute Resolution* (Bloomsbury Publishing 2013)

[112] See eg Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 399; Rob van Gestel and Peter van Lochem, 'Private Standards as a Replacement for Public Lawmaking?' in Marta Cantero Gamito and Hans-W Micklitz (eds), *The Role of the EU in Transnational Legal Ordering: Standards, Contracts and Codes* (Edward Elgar 2020). These concerns are shared by the Commission that recently put forward a proposal to limit the voting rights of members of ESOs who are not representatives of competent national standardisation bodies: Commission, 'Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) No 1025/2012 as regards the decisions of European standardisation organisations concerning European standards and European standardisation deliverables' COM (2022) 32 final.

on fundamental rights.[113] In the era of the 'race to AI'[114] it is essential that all interests at stake are duly considered by both public and private rule-makers alike. However, it is not sure that standards makers are in the best position to make certain ethical and legal decisions.[115] Rather, the regulation of AI requires cooperation between scientists, developers, policymakers, and ethicists.[116] On the other hand, in the AI sector reactivity to fast scientific advancements and to changes in market needs is fundamental not to stifle competition. From this pragmatic angle, standardisation is superior to law-making due to its flexibility and due to the sector-specific expertise of standards makers. Hence, there might be a trade-off between constitutionalisation and efficiency of rule-making.[117]

4 The role of standards in private law

Building on the findings in the previous section, it is hereby demonstrated that extracontractual and contractual liability are deeply intertwined with standardisation, for the expertise encoded in standards is used as a yardstick against which a professional's behaviour is evaluated.

Notably, tort law is highly fragmented in Europe.[118] Absent a comprehensive body of EU tort law,[119] only specific hypotheses of liability are harmonised, such as liability for defective products. Nonetheless, fundamental tenets of extracontractual liability are shared by national tort laws. There are three main bases of liability, namely fault, strict,

[113] For instance, see our study on disability discrimination in AI-powered recruiting: Maarten Buyl and others, 'Tackling Algorithmic Disability Discrimination in the Hiring Process: An Ethical, Legal and Technical Analysis', *2022 ACM Conference on Fairness, Accountability, and Transparency* (Association for Computing Machinery 2022) <https://dl.acm.org/doi/pdf/10.1145/3531146.3533169>, available at arXiv <https://arxiv.org/abs/2206.06149v1>. In the context of eHealth, see *ex multis* Hannah van Kolfschooten, 'EU Regulation of Artificial Intelligence: Challenges for Patients' Rights' (2021) 59 CMLR 81.

[114] Nathalie A Smuha, 'From a 'Race to AI' to a 'Race to AI Regulation': Regulatory Competition for Artificial Intelligence' (2021) 13 Law, Innovation and Technology 57.

[115] Martin Ebers, 'Standardizing AI: The Case of the European Commission's Proposal for an "Artificial Intelligence Act"' in Larry A DiMatteo, Cristina Poncibò and Michel Cannarsa (eds), *The Cambridge Handbook of Artificial Intelligence* (CUP 2022), 342; Clothilde Goujard and Gian Volpicelli, 'Harmful AI Rules: Now Brought to You by Europe & Co., Inc.' Politico (31 October 2022) <https://www.politico.eu/article/harmful-ai-rules-european-union-corporate-influence/> accessed 4 November 2022.

[116] Virginia Dignum, *Responsible Artificial Intelligence: How to Develop and Use AI in a Responsible Way* (Springer 2019), 97-98.

[117] Marta Cantero Gamito, 'The Role of the EU in the Transnational Governance of Standards, Contracts and Codes' in Marta Cantero Gamito and Hans-W Micklitz (eds), *The Role of the EU in Transnational Legal Ordering: Standards, Contracts and Codes* (Edward Elgar 2020), 22.

[118] See Ernst Karner, Bernhard A Koch and Mark A Geistfeld, 'Comparative Law Study on Civil Liability for Artificial Intelligence' (European Commission – Directorate-General for Justice and Consumers 2021).

[119] Cf Marta Infantino, 'Making European Tort Law: The Game and Its Players' (2010) 18 Cardozo J Int'l & Comp L 45; Helmut Koziol, 'Harmonising Tort Law in the EU: Advantages and Disadvantages' [2013] ELTE LJ - Separatum 73.

and vicarious liability.[120] Particularly, in addition to causation[121] and damage,[122] fault-based liability requires the assessment of fault on behalf of the alleged tortfeasor. In a nutshell, fault is generally understood as the (intentional or negligent) objective deviation from the required standard of conduct, which is that of a 'reasonable person.'[123] Hence, the question is what conduct the law requires to meet this standard.

Like tort law, the general law of contract is not harmonised in Europe, even though there is a comprehensive body of EU primary and secondary law in the context of different areas (the so-called *acquis communautaire*).[124] Nonetheless, comparative studies have revealed the existence of a set of shared rules and principles in national provisions of general contract law as well.[125] Remedies against non-performance in national contract law usually do not depend on fault. However, parties' conduct is taken into account in apportioning liability when a breach of contract occurs. First, performance needs to be satisfactory. Several provisions of domestic law obligate parties to execute contracts in good faith and with due diligence. Moreover, non-performance is generally excused in the event of impediments that were not reasonably foreseeable or avoidable.[126] Finally, in the case of gross negligence, contractual liability is extended to unforeseeable damage.[127] The questions are what conduct constitutes satisfactory performance, and which circumstances are considered as being beyond any reasonable control and therefore excuse non-performance and exclude liability for damages.

Markedly, general clauses like the reasonable person standard and due diligence are abstract legal concepts that can be imbued with different content.[128] In concrete cases,

[120] European Group on Tort Law, *Principles of European Tort Law: Text and Commentary* (Springer 2005), Articles 4:101 to 6:102, 64-119. Fault is the criterion of imputation for damage caused by personal misconduct. Strict liability might include no-fault liability for risks involving animals or objects as well as cases involving dangerous human activity. Finally, vicarious liability means liability for others. Namely, the person in charge of a minor or of an incapacitated person is responsible for the damage they cause. Moreover, the principal is responsible for the tortious acts of his or her agents and employees. Under some doctrines, vicarious liability may be qualified as strict liability.

[121] Cf Christian von Bar, Eric Clive and Hans Schulte-Nölke (eds), *Principles, Definitions and Model Rules of European Private Law. Draft Common Frame of Reference* (European Law Publishers 2009), Comment A to Article VI-4:101. For a comparative study on causation see Jaap Spier (ed), *Unification of Tort Law: Causation* (Kluwer Law International 2000).

[122] For a comparative study on damage see Ulrich Magnus (ed), *Unification of Tort Law: Damages* (Kluwer Law International 2001).

[123] See European Group on Tort Law, *Principles of European Tort Law: Text and Commentary* (Springer 2005), 64-100.

[124] For a complete overview see *ex multis* Reiner Schulze and Fryderyk Zoll, *European Contract Law* (3rd edn, Bloomsbury Publishing 2021).

[125] As a result of these comparative studies, two main soft law instruments have been built on this common core of general contract law, namely the Principles of European Contract Law (PECL) and the UNIDROIT's Principles of International Commercial Contracts (PICC).

[126] Article 8:108(1) PECL and Article 7.1.7 PICC.

[127] Article 9:503 PECL.

[128] Alan D Miller and Ronen Perry, 'The Reasonable Person' (2012) 87 NYUL Rev 323, 325.

these standards of conduct are adjusted to account for individual characteristics.[129] Indeed, skills or knowledge that exceed those possessed by most others influence what can be reasonably expected of an individual. The benchmark that must be met thus corresponds to that of a reasonable person of comparable education and expertise. It is precisely in this respect that standards come into play. As they supposedly encode best practices, parties and courts invoke them to substantiate general clauses in deciding on professionals' liability and performance. Hence, the interplay between standards, safety, and liability deserves further investigation.

4.1 Standards, safety, and liability: connecting the dots

To unveil the role of standards in liability litigation, different normative frameworks need to be considered. Starting from the manufacturing of goods, EU product safety law defines under which conditions a product can be released onto the market. Such conditions are laid down in the General Product Safety Directive[130] ('GPSD'), according to which a product is deemed safe if, under normal or reasonably foreseeable conditions of use, it does not pose unacceptable risks for the safety and health of persons.[131] Interestingly, safety requirements are not limited to technical features. Pursuant to the GPSD, 'the presentation of the product, the labelling, any warnings and instructions for its use and disposal and any other indication or information regarding the product' must also be taken into account when assessing a product's safety.[132] In addition to that, product-specific safety legislation sets out distinctive requirements. Examples include safety rules relating to machinery,[133] toys,[134] drones,[135] medical

[129] For instance, this principle is enshrined in the American Restatement (Third) of Torts: Liability for Physical and Emotional Harm (American Law Institute 2010), § 12. From an American perspective, see Omri Ben-Shahar and Ariel Porat, 'Personalizing Negligence Law' (2016) 91 NYUL Rev 627, 641-644.
[130] Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on general product safety [2001] OJ L11/4 [GPSD].
[131] GPSD, Article 2(b).
[132] ibid.
[133] Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (recast) [2006] OJ L157/24 (hereinafter, 'Machinery Directive'). The directive covers a wide range of products, consumer and industrial, going from lawnmowers to sophisticated industrial robots.
[134] Directive 2009/48/EC of the European Parliament and of the Council of 18 June 2009 on the safety of toys [2009] OJ L170/1.
[135] Commission Delegated Regulation (EU) 2019/945 of 12 March 2019 on unmanned aircraft systems and on third-country operators of unmanned aircraft systems [2019] OJ L152/1 (hereinafter, 'Drones Regulation').

devices,[136] pharmaceuticals.[137] Where present, specific safety provisions take precedence over the GPSD.[138]

Pursuant to the NLF, statutory requirements under EU law are complemented by standards.[139] In the absence of specific EU law provisions, national product safety law applies.[140] Products are presumed safe when they conform to European harmonised standards that have been transposed by national standards.[141] In the lack of such standards, product safety is assessed by taking into account other standards, Commission guidelines, codes of good practices, state-of-the-art, and reasonable consumer's expectations.[142] In addition to these general safety requirements, several products must also undergo conformity assessment to obtain the CE mark. In this regard, compliance with technical standards makes these assessments significantly smoother. However, manufacturers can always choose not to comply with said standards and demonstrate that essential safety requirements are satisfied by alternative means.

Once the product is deemed safe and placed on the market, the producer can still be liable for damages caused to consumers by their product under the PLD. In fact, the GPSD is without prejudice to the application of the PLD.[143] Indeed, a product that is deemed safe may still be defective and cause damage. This is because product safety rules and product liability rules operate at essentially different levels.[144] For instance, even though a product is certified as safe, one specific item can still be defective, or defects can emerge with the use of the product, after its placement on the market. Therefore, legislation on product safety and on product liability are complementary.[145] Pursuant to the PLD, the producer is strictly liable for physical harm[146] caused to persons or property by a defect in their product. Instead, immaterial harm and pure economic

[136] Regulation (EU) 2017/745 of the European Parliament and of the Council of 5 April 2017 on medical devices, amending Directive 2001/83/EC, Regulation (EC) No 178/2002 and Regulation (EC) No 1223/2009 and repealing Council Directives 90/385/EEC and 93/42/EEC [2017] OJ L117/1 (hereinafter, 'Medical Devices Regulation'); Regulation (EU) 2017/746 of the European Parliament and of the Council of 5 April 2017 on in vitro diagnostic medical devices and repealing Directive 98/79/EC and Commission Decision 2010/227/EU [2017] OJ L117/176.
[137] Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to medicinal products for human use [2001] OJ L 311/67.
[138] GPSD, Article 1(2).
[139] See *supra* at Section 2.
[140] GPSD, Article 3(2), first subparagraph.
[141] GPSD, Article 3(2), second subparagraph.
[142] GPSD, Article 5. Similar presumptions of conformity are provided by specific safety legislation, such as Article 7(2) Machinery Directive, Article 12 Drones Regulation, Article 8 Medical Devices Regulation.
[143] GPSD, Article 17.
[144] Andrea Bertolini, 'Artificial Intelligence and Civil Liability' (European Parliament, Directorate-General for Internal Policies of the Union 2020) <https://data.europa.eu/doi/10.2861/220466>, 50-51.
[145] ibid.
[146] PLD, Article 9.

loss fall outside the scope of the PLD[147] and can therefore be compensated only under national law remedies. A product is defective if it does not provide the safety that a person is entitled to expect having regard to the use to which the product could reasonably be put.[148] As for safety, the presentation of the product must also be taken into account when assessing whether the product is defective.[149]

Hence, compliance of products with harmonised standards is verified *ex ante* when releasing the CE mark, unless the manufacturer chooses to demonstrate that the product is safe by other means. Nonetheless, standards can play a role *ex post* too, namely in liability litigation. Other standards that were not relevant for the purposes of the CE marking can be considered to assess whether the product is defective. Moreover, for goods and damage that fall outside the scope of application of the PLD, aggrieved parties can seek restoration under national tort law. Hence, plaintiffs might have to prove fault on behalf of the producers, or that they failed to take reasonable precautions. In this regard, deviation from standards and best practices might serve as evidence of negligence.

The PLD does not apply to services[150] nor to stand-alone software. However, this might soon change in light of the proposed PLD II.[151] Furthermore, pursuant to the Directives on Sale of Goods[152] ('SGD') and on Digital Content and Digital Services[153] ('DCSD'), sellers of digital goods and traders of digital content and services, including stand-alone software, are contractually liable[154] to consumers for lack of conformity with the contract or with the legal requirements set out in the directives.[155] In the event

[147] However, the proposed PLD II extends compensation to the case of loss or corruption of data, including cost of recovering or restoring data (Article 4, No 6, letter c, read in conjunction with Recital 16).
[148] PLD, Article 6(1).
[149] ibid.
[150] Case C-495/11 *Centre hospitalier universitaire de Besançon v Thomas Dutreux and Caisse primaire d'assurance maladie du Jura* [2011] EU:C:2011:869. More recently, Case C-65/20 *VI v KRONE – Verlag Gesellschaft mbH & Co KG.* [2021] EU:C:2021:471, paras 24-32.
[151] PLD II, Article 4, No 1 and 4.
[152] Directive (EU) 2019/771 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the sale of goods, amending Regulation (EU) 2017/2394 and Directive 2009/22/EC, and repealing Directive 1999/44/EC [2019] OJ L136/28.
[153] Directive (EU) 2019/770 of the European Parliament and of the Council of 20 May 2019 on certain aspects concerning contracts for the supply of digital content and digital services [2019] OJ L 136/1.
[154] SGD, Article 10 and DCSD, Article 11.
[155] For comments on the directives see eg Ignacio Fernández Chacón, 'Some Considerations on the Material Scope of the New Digital Content Directive: Too Much to Work Out for a Common European Framework' (2021) 29 ERPL 517; Dirk Staudenmayer, 'The Directives on Digital Contracts: First Steps Towards the Private Law of the Digital Economy' (2020) 28 ERPL 219; Christian Twigg-Flesner, 'Conformity of Goods and Digital Content/Digital Services' in Esther-Cámara Arroyo Amayuelas and Sergio Lapuente (eds), *El Derecho privado en el nuevo paradigma digital* (Marcial Pons 2020), available in preprint version at SSRN <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3526228>. For a preliminary comment on the directive proposals cf Christina Ramberg, 'Digital Content – A Digital CESL II – A Paradigm for Contract Law via the Backdoor?' in Stefan Grundmann (ed), *European Contract Law in the Digital Age* (Intersentia 2018). Cf Martin Ebers, 'Liability for Artificial Intelligence and EU Consumer Law' (2021) 12 JIPITEC 204. For a critical analysis with a focus on AI products and services see Raphaël Gellert, 'The EU's New Directives on Digital Contracts, and Artificial Intelligence: Really Future Proof?' (2021) 21 ERPL 403.

of a lack of conformity, consumers are entitled to have their goods or services brought into conformity by means of repair or replacement, to receive a proportionate reduction in the price, or to terminate the contract. Moreover, sellers and traders of digital products and services, including stand-alone software, are contractually liable to consumers. Whilst the SGD and the DCSD apply to sellers and traders, not to producers,[156] the former ones are entitled to seek redress from other persons involved in the chain of transactions if they are responsible, including producers.[157] Hence, producers are indirectly liable for the lack of conformity of digital products.

In this regard, standards and professional norms might be relevant in assessing whether the content or service is affected by a lack of conformity. As shown in Section 3, they can make their way before courts by reference in legal provisions, or as explicit or implicit contractual clauses, criteria for the interpretation of general clauses, or customary law. The same is true for national contract law remedies against non-performance and contractual damage.

Pursuant to the Standardisation Regulation, European standardisation concerns products as well as services alike.[158] Already in 2006, the Services Directive encouraged the development of European standards regarding interoperability between services, information, and quality of service.[159] Unlike products, there is no CE marking for services. However, service providers undertake third-party certification or assessment of their activities.[160]

Arguably, the implications of standards for private law are particularly penetrating in the field of services.[161] As remarked by Busch and Reinhold,[162] standards for services are different from standards for products in that they are not so much of a technical nature, but rather of a legal nature. Service standards resemble general terms and conditions as they set out requirements for the pre-contractual phase like information duties and, most importantly, they define the duties of the service provider and the

[156] Unless the producer offers to the consumer a commercial guarantee of durability for certain goods for a certain period of time. In this case, pursuant to Article 17 SGD, the producer is liable directly to the consumer, during the entire period of the commercial guarantee of durability for repair or replacement of the goods in accordance with Article 14.
[157] SGD, Article 18 and DCSD, Article 20.
[158] See *supra* at Section 2.
[159] Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market [2006] OJ L376/36, Article 26(5).
[160] ibid, Article 26(1).
[161] Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 421 -422; Hans-W Micklitz, 'Services Standards: Defining the Core Consumer Elements and their Minimum Requirements' (ANEC 2007) <http://www.anec.eu/attachments/ANEC-R&T-2006-SERV-004final.pdf>, 21: 'At the very least [...] standardisation of services affects the rights and duties of the contracting partners, that is standards may give shape to legal rights in European and national contract law, for example, they may give shape to an already existing legal right to information.'
[162] Christoph Busch and Simon Reinhold, 'Standardisation of Online Dispute Resolution Services: Towards a More Technological Approach' (2015) 4 EuCML 50, 53. See *supra* at Section 2.

applicable standards of care.[163] Compliance with service standards is thus ensured via contractual obligations and remedies, such as termination of the contract.[164] Here, standards and professional norms are as relevant as for the evaluation of a lack of conformity.

Finally, for situations not covered by EU law, national law applies. For instance, this is the case with extracontractual liability other than product liability. In this regard, standards and professional norms are pivotal to establishing whether professionals fulfilled their duties of care or vice versa were negligent. Notoriously, in highly technical cases courts rely on experts' opinions. The findings of experts are based on standards, professional norms, and best practices. Hence, the role of private rules in extracontractual liability litigation.

Of course, non-professionals, ie consumers, can cause damage to other persons too. However, laymen are held to a lower standard of conduct than professionals since what can be reasonably expected from a person carrying out an activity depends on his or her expertise.[165] Hence, standards and professional norms are not really relevant in such cases. The importance of distinguishing between professional and non-professional users of AI systems is recognised by the Commission in its proposal for an AI Liability Directive. In fact, Article 4(6) takes a stand against a generalised application of the proposed presumption of causation in national tort cases. As clarified by Recital 29, it is not appropriate to aggrieve the position of defendants who are not professional users of AI systems, unless they interfered with its operation or failed to take the required precautions. Hence, the Commission acknowledges that non-professional users of AI systems are not required to abide by the same standard of care as professionals.

In conclusion, standards can substantiate technical requirements, contractual obligations, and general clauses. In particular, requirements or obligations may be drafted so vaguely that they are a mere 'empty shell' to fill with content.[166] General clauses instead are vague by definition. Hence, the key role of standards in shaping their concrete meaning. Particularly, standards inform general clauses such as the reasonable person standard in tort law, or due diligence in contract performance. Hence, in spite of the voluntary nature of standards, they have strong normative power.[167] Besides, standards may be invoked by courts when interpreting statutory

[163] See Standardisation Regulation, Article 2(4)(c).
[164] Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 421-422.
[165] European Group on Tort Law, *Principles of European Tort Law: Text and Commentary* (Springer 2005), Article 4:102.
[166] Pierluigi Cuccuru, 'Regulating by Request: On the Role and Status of the Standardisation Mandate under the New Approach' in Mariolina Eliantonio and Caroline Cauffman (eds), *The Legitimacy of Standardisation as a Regulatory Technique. A Cross-disciplinary and Multi-level Analysis* (Edward Elgar 2020) 57.
[167] See *supra* at Section 3.

norms, even if perhaps more rarely.[168] Therefore, regardless of their voluntary nature, standards establish a benchmark for evaluating conduct, conformity, and performance.[169] Finally, they can be explicitly referred to by contracts and statutory norms and thus be mandatory. This is true with regard to both situations governed by EU law and situations covered by national law, as well as to both commercial and consumer contracts.

The importance of standards in liability claims should not come as a surprise. Ultimately, this issue points to the increasingly decisive role of scientific and technical knowledge in courtrooms.[170] Although this phenomenon is to some extent unavoidable in modern industrial society, it comes with significant challenges in terms of democracy and legitimacy due to the constitutional shortcomings of standardisation.[171]

5 AI standardisation in the AI Act framework and beyond

The landscape of AI governance is a complex patchwork of State-made law and other norms coined by institutional and non-institutional private actors. In essence, an AI system is an information technology ('IT') system for which a multitude of standards from various industries and fields of application already exist[172] and more are to come. The analysis of AI standardisation is particularly compelling in the aftermath of the AI Act which ascribes a pivotal role to standards.

Following the NLF approach,[173] legal requirements enshrined in the AI Act are intended to be specified by standards and common specifications.[174] Specifically, the AI Act lays down legal requirements for the design, development, and deployment of high-

[168] Dan Wielsch, 'Global Law's Toolbox: How Standards Form Contracts' in Horst Eidenmüller (ed), *Regulatory Competition in Contract Law and Dispute Resolution* (Beck/Hart Publishing/Nomos 2013), 83. The Author makes the example of a judgment of the German Supreme Court (BGH NJW 2008, 511 (514); NJW 1987, 643) in which the VOB/B, ie the general conditions of contract relating to the execution of construction work, was invoked by courts when construing the meaning of statutory norms. The VOB/B was established by the DAV (*Deutscher Vergabe- und Vertragsausschuss für Bauleistungen*), an association within which public authorities and head organizations of the construction industry participate.

[169] Pierluigi Cuccuru, 'The Public and Private Sides of Harmonized Standards: *James Elliott Construction v. Irish Asphalt*' (2018) 19 German LJ 1399, 1413.

[170] Cf Sheila Jasanoff and Dorothy Nelkin, 'Science, Technology, and the Limits of Judicial Competence' (1982) 22 Jurimetrics 266; Etienne Vergès and Lara Khoury, 'Le traitement judiciaire de la preuve scientifique: une modélisation des attitudes du juge face à la connaissance scientifique en droit de la responsabilité civile' (2017) 58 Les Cahiers de Droit 517. Cf in the context of environmental litigation Christina Eckes, 'Tackling the Climate Crisis with Counter-Majoritarian Instruments: Judges Between Political Paralysis, Science, and International Law' (2021) 6 *European Papers* 1307.

[171] See *supra* at Section 3.

[172] DIN-DKE, 'German Standardization Roadmap on Artificial Intelligence' (November 2020) <https://www.din.de/resource/blob/772610/8bfea3055c03aa1e2563afc16001b06f/normungsroadmap-en-data.pdf>, 24; Stefano Nativi and Sarah De Nigris, 'AI Watch, AI Standardisation Landscape State of Play and Link to the EC Proposal for an AI Regulatory Framework' (European Commission – Joint Research Centre 2021).

[173] See *supra* at Section 3.

[174] Cf AI Act, Explanatory Memorandum, 13 and AI Act, Recital 61.

risk AI systems.[175] Such requirements deal with data and data governance, documentation and record keeping, transparency and provision of information to users, human oversight, robustness, accuracy and security.[176] In the words of the Commission, common mandatory requirements are intended to be 'further operationalised through harmonised technical standards [...] [which] will assist providers and users in complying with the requirements laid down by the proposal and minimise their costs.'[177] Therefore, AI standardisation aims to foster legal certainty and lower compliance costs for providers of high-risk AI systems.

For this, a key instrument is the presumption of compliance established by Article 40. Accordingly, high-risk AI systems which conform to harmonised standards shall be presumed to be compliant with legal requirements. Similarly, a presumption of compliance is set out in Article 41 for high-risk AI systems in conformity to common specifications[178] put forward by the Commission. Moreover, providers must justify the adoption of different measures other than the Commission's specifications, which must be equivalent to said specifications (Article 41(4)).

Common specifications are adopted by the Commission in case harmonised standards are absent or deemed insufficient (Article 41 and Recital 61). Hence, common specifications represent 'a safety net or backstop.'[179] When preparing common specifications, the Commission is required to consult relevant bodies or expert groups. Moreover, common specifications ought to be approved by a committee composed of representatives of the member States (Article 74). Whilst common specifications surely represent a flexible governance instrument, it has been observed that they might give too much discretion to the Commission, in spite of its less expertise if compared to ESOs, who adopt harmonised standards.[180]

Whilst compliance with harmonised standards and common specifications is not mandatory, it is reasonably foreseeable that most providers will follow them. Indeed, it would be very costly to demonstrate compliance with all requirements enshrined in the AI Act without benefitting from the presumption of conformity.[181] Moreover,

[175] For the definition of high-risk AI system see fn 13.
[176] AI Act, Title V, Chapter 2.
[177] AI Act, Explanatory Memorandum, 6-7. See also AI Act, Recital 61.
[178] Common specifications were first introduced in the health sector in 2017 by Regulation (EU) 2017/745 on Medical Devices and Regulation (EU) 2017/746 on In-Vitro Diagnostic Devices. In this context, the use of common specifications was criticized by some stakeholders. See Mark McFadden and others, 'Harmonising Artificial Intelligence: The Role of Standards in the EU Regulation' (Oxford Commission on AI & Good Governance 2021), 8 and references therein.
[179] Mark McFadden and others, 'Harmonising Artificial Intelligence: The Role of Standards in the EU Regulation' (Oxford Commission on AI & Good Governance 2021), 9.
[180] ibid.
[181] High-risk AI systems that are not in conformity to harmonised standards or common specifications shall undergo the third-party conformity assessment set out in Annex VII (Article 43(1), second subparagraph). Moreover, in case of non-compliance with harmonised standards, providers of high-risk AI systems are also subject to further documentation burdens with regard to quality management systems (Article 17(1)(e)).

harmonised standards and common specifications will guide the interpretation of said requirements. Finally, in spite of the fact that standards are voluntary rules, several provisions of the AI Act explicitly require providers to take into account the state of the art as formalised in standards.[182] For all these reasons, the normative framework for high-risk AI systems will be consistently shaped by AI standards.[183]

In the AI Act framework, the main actors of AI standardisation are the three ESOs, that are in charge of enacting harmonised standards. The CEN and the CENELEC established a Focus Group on AI already in 2019 and then the Joint Technical Committee 21 'Artificial Intelligence' ('JTC 21') in 2021.[184] JTC 21 is currently drafting standards on conformity assessment and natural language processing technologies.[185] Besides developing its own standards, JTC 21 aims to provide guidance to other technical committees involved in AI standardisation with a view to promoting consistency in values and terminology between different standards that bear relevance to AI,[186] such as those on smart manufacturing,[187] electrical equipment in medical practice,[188] cybersecurity and data protection,[189] ICT professionalism and digital competences,[190] railway applications,[191] intelligent transport systems,[192] road vehicles.[193]

Furthermore, information communication technology ('ICT') standards are also crucial for AI technology since they govern technical interoperability. Indeed, interconnectivity and interoperability are key features of many AI ecosystems and particularly AI-driven Internet of Things ('IoT') systems.[194] ICT standards stem from the third ESO, the ETSI. ETSI's technical bodies are already addressing numerous aspects of using AI in ICT systems. These include 5G systems, network planning and optimization,

[182] AI Act, Articles 9(3), 12(1), 17(1).
[183] Cf Michael Veale and Frederik Zuiderveen Borgesius, 'Demystifying the Draft EU Artificial Intelligence Act. Analysing the Good, the Bad, and the Unclear Elements of the Proposed Approach' (2021) 22 Computer L Rev Int'l 97, 105; Martin Ebers, 'Standardizing AI: The Case of the European Commission's Proposal for an "Artificial Intelligence Act"' in Larry DiMatteo, Michel Cannarsa and Cristina Poncibò (eds), *The Cambridge Handbook of Artificial Intelligence: Global Perspectives on Law and Ethics* (CUP 2022), 338.
[184] 'CEN and CENELEC Launched a New Joint TC on Artificial Intelligence' (CEN-CENELEC, 3 March 2021) <https://www.cencenelec.eu/news-and-events/news/2021/briefnews/2021-03-03-new-joint-tc-on-artificial-intelligence/> accessed 4 November 2022.
[185] 'CEN/CLC/JTC 21 Work Programme' <https://standards.cencenelec.eu/dyn/www/f?p=205:22:0::::FSP_ORG_ID,FSP_LANG_ID:2916257,25&cs=1827B89DA69577BF3631EE2B6070F207D> accessed 4 November 2022.
[186] CEN-CENELEC JTC 21, 'Business Plan for JTC 21, Version 1.0' <https://standards.cencenelec.eu/BPCEN/2916257.pdf> accessed 4 November 2022.
[187] CLC/SR SM Smart Manufacturing.
[188] CLC/TC 62 Electrical equipment in medical practice.
[189] CEN/CLC/JTC 13 Cybersecurity and Data Protection.
[190] CEN/TC 428 ICT Professionalism and Digital Competences.
[191] CEN/TC 256 Railway applications.
[192] CEN/TC 278 Intelligent transport systems.
[193] CEN/TC 30 Road Vehicles.
[194] Geraint Howells and Christian Twigg-Flesner, 'Interconnectivity and Liability: AI and the Internet of Things' in Larry A DiMatteo, Cristina Poncibò and Michel Cannarsa (eds), *The Cambridge Handbook of Artificial Intelligence: Global Perspectives on Law & Ethics* (CUP 2022).

service provisioning and assurance, operator experience, security, IoT, data management, and testing.[195] However, it is worth noting that ETSI is considered less inclusive of small and medium-sized enterprises (SMEs) and of other non-industrial stakeholders[196] than CEN and CENELEC. Different from the other two ESOs, ETSI does not allow non-industrial organisations to submit formal opinions on draft standards (the so-called 'right of opinion').[197] Moreover, the ETSI differs in its membership structure and participation rules from the other two ESOs. Unlike them, the ETSI is an association of industry and national governments who work closely, 'sitting at the same table', and who adopt standards collaboratively by means of a consensus-based decision-making process based on direct member participation, not national representation.[198] Additionally, the voting rights of industrial stakeholders are higher than the combined voting rights of any other category of stakeholders or Authority.[199] These democratic concerns should not be underestimated because ICT standards have potentially trade-restrictive effects.[200] Hence, it is of utmost importance that adequate consideration is devoted to the interests of SMEs and other non-industrial stakeholders.[201] The Commission seems willing to take steps in this direction as it recently submitted a regulatory proposal that strips industrial stakeholders of their right to vote on paramount decisions in ESOs, such as the acceptance and refusal of standardisation requests or the adoption and revision of European standards.[202]

[195] Lindsay Frost and others, 'Artificial Intelligence and Future Directions for ETSI' (2020) ETSI White Paper No. 34 <https://www.etsi.org/images/files/ETSIWhitePapers/etsi_wp34_Artificial_Intellignce_and_future_directions_for_ETSI.pdf>, 4.
[196] Cf Standardisation Regulation, Article 5 which requires the ESOs to encourage and facilitate an appropriate representation and effective participation of all relevant stakeholders, including SMEs, consumer organisations, and environmental and societal stakeholders in their standardisation activities. The identified stakeholder organisations currently receiving EU financing (also known as the 'Annex III organisations') are Small Business Standards (SBS), the European consumer voice in standardisation (ANEC), the Environmental Coalition on Standards European Environmental Citizens Organisation for Standardisation (ECOS) and the European Trade Union Confederation (ETUC), respectively representing SMEs, consumers, environmental and workers' interests. Cf Commission, 'Standardisation package – Report from the Commission to the European Parliament and the Council on the implementation of the Regulation (EU) No 1025/2012 from 2016 to 2020' COM (2022) 30 final, 2.
[197] Commission, 'Standardisation package – Report from the Commission to the European Parliament and the Council on the implementation of the Regulation (EU) No 1025/2012 from 2016 to 2020' COM (2022) 30 final, 3 (hereinafter, 'Standardisation Package').
[198] Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 413 f.
[199] Commission, Standardisation Package, 3.
[200] See Olia Kanevskaia, 'ICT Standards Bodies and International Trade: What Role for the WTO?' (2022) 56 JWT 429. See also Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 421-422, arguing that differential switching costs of ensuring interoperability between networks and systems discourage the adoption of non-European ICT standards.
[201] See Fabrizio Cafaggi, 'New Foundations of Transnational Private Regulation' (2011) 38 J L & Soc'y 50: 'It is difficult, if not impossible, for small suppliers to afford the costs of private regulation rendering it impossible to gain or maintain market access.'
[202] Commission, 'Proposal for a Regulation of the European Parliament and of the Council amending Regulation (EU) No 1025/2012 as regards the decisions of European standardisation organisations concerning European standards and European standardisation deliverables' COM (2022) 32 final, Article 1(2).

Whereas the proposed AI Act pointed at ESOs and at the Commission as the main regulators of AI, harmonised standards and common specifications will overlap with other standards[203] and professional norms. In the framework of AI governance, private rules stem from a variety of institutional and non-institutional actors. They include the design of technology architecture by private standards bodies[204] and by the many professionals along the AI pipeline.

Moreover, the approval of the AI Act, its entry into force, and the adoption and validation of harmonised standards will require some time. Accordingly, the Commission itself foresees that harmonised standards for AI will not be available before three to four years.[205] It is even doubtful whether the envisioned time would be sufficient since AI standardisation entails additional practical difficulties if compared to other sectors,[206] such as the risk of rapid obsolescence, the manifold interests involved, the diversity among the possible field of applications of AI technology.[207] Hence, European standardisation of AI will likely move at a much slower pace than the development of the technology itself.[208] In the meantime, existing and upcoming standards other than harmonised standards and common specifications gain ground.

At an international level, the main actor of AI standardisation is ISO/IEC JTC 1/SC 42, which is the joint committee on AI established by the International Organisation for Standardisation (ISO) and the International Electrotechnical Commission (IEC). The JTC 1/SC 42 has already published fifteen standards to date,[209] including standards on machine learning,[210] big data,[211] bias,[212] trustworthiness,[213] and robustness.[214] Furthermore, it is currently working on fundamental topics such as the controllability

[203] For a mapping of the AI standards onto the requirements introduced by the AI Act see Stefano Nativi and Sarah De Nigris, 'AI Watch, AI Standardisation Landscape State of Play and Link to the EC Proposal for an AI Regulatory Framework' (European Commission – Joint Research Centre 2021).
[204] Olia Kanevskaia, 'ICT Standards Bodies and International Trade: What Role for the WTO?' (2022) 56 JWT 429, 444.
[205] Commission, 'Impact Assessment Accompanying the Proposal for a Regulation of the European Parliament and of the Council laying down harmonised rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts', part 1/2, 57.
[206] Martin Ebers, 'Standardizing AI: The Case of the European Commission's Proposal for an "Artificial Intelligence Act"' in Larry DiMatteo, Michel Cannarsa and Cristina Poncibò (eds), *The Cambridge Handbook of Artificial Intelligence: Global Perspectives on Law and Ethics* (CUP 2022), 332-333.
[207] Cf DIN-DKE, 'German Standardization Roadmap on Artificial Intelligence' (November 2020) <https://www.din.de/resource/blob/772610/8bfea3055c03aa1e2563afc16001b06f/normungsroadmap-en-data.pdf>, 25.
[208] Mark McFadden and others, 'Harmonising Artificial Intelligence: The Role of Standards in the EU Regulation' (Oxford Commission on AI & Good Governance 2021), 18.
[209] As of 4 November 2022.
[210] ISO/IEC TS 4213:2022, ISO/IEC 23053:2022.
[211] ISO/IEC 20546:2019, ISO/IEC TR 20547-1:2020, ISO/IEC TR 20547-2:2018, ISO/IEC 20547-3:2020, ISO/IEC TR 20547-5:2018.
[212] ISO/IEC TR 24027:2021.
[213] ISO/IEC TR 24028:2020.
[214] ISO/IEC TR 24029-1:2021.

of automated AI systems, testing, data quality, and performance assessment.[215] Remarkably, it is developing a quality model for AI systems, the 'Systems and software Quality Requirements and Evaluation (SQuaRE)'.[216] Moreover, essential standards are being developed by other ISO/IEC joint committees as well as by ISO and IEC separately.[217]

Besides, other consortia like professional associations also work on AI and ICT standardisation, such as the Institute of Electrical and Electronics Engineers (IEEE),[218] which launched its Global Initiative on Ethics of Autonomous and Intelligent Systems', the Internet Engineering Task Force (IETF), the International Telecommunication Union (ITU), the Open Geospatial Consortium (OGC), the World Wide Web Consortium (W3C), the Connectivity Standards Alliance (CSA), the Object Management Group (OGM), OASIS Open. It has been critically observed that some of them may lack impartiality as their experts tend to be affiliated with industries rather than independent researchers.[219] This notwithstanding, standards developed by these informal groups can become more widespread than those created within an internationally recognised standards body due to market preferences.[220]

At a national level, AI standards are developed by standards organisations. However, once harmonised standards are approved, all conflicting national standards will have to be withdrawn.[221] Notably, the German Institute for Standardization (DIN), together with DKE (German Commission for Electrical, Electronic & Information Technologies of DIN and VDE), put forward a Roadmap on AI Standardisation including recommendations

[215] 'Standards by ISO/IEC JTC 1/SC 42 Artificial Intelligence' (ISO) <https://www.iso.org/committee/6794475/x/catalogue/p/0/u/1/w/0/d/0> accessed 4 November 2022.

[216] 'ISO/IEC DIS 25059: Software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Quality model for AI systems' (ISO) <https://www.iso.org/standard/80655.html?browse=tc> accessed 4 November 2022.

[217] For a detailed account of ISO's and IEC's activity see Martin Ebers, 'Standardizing AI: The Case of the European Commission's Proposal for an Artificial Intelligence Act' in Larry DiMatteo, Michel Cannarsa and Cristina Poncibò (eds), *The Cambridge Handbook of Artificial Intelligence: Global Perspectives on Law and Ethics* (CUP 2022), 328-329.

[218] See the IEEE P7000™ standards project at <https://ethicsinaction.ieee.org/p7000/>; IEEE, *Ethically Aligned Design. A Vision for Prioritizing Human Well-being with Autonomous and Intelligent Systems* (1st edn) <https://ethicsinaction.ieee.org/wp-content/uploads/ead1e.pdf>; IEEE, *IEEE Finance Playbook Version 1.0. Trusted Data and Artificial Intelligence Systems (AIS) for Financial Services*; Raja Chatila and John C Avens, 'The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems' in Maria Isabel Aldinhas Ferreira and others, *Robotics and Well-Being* (Springer 2019).

[219] Cf Gian Luca Conti, 'La lex informatica' (2021) 14 Osservatorio sulle fonti 318 <https://www.osservatoriosullefonti.it/mobile-saggi/mobile-numeri-speciali/speciale-l-impatto-delle-dinamiche-transnazionali-sui-sistemi-normativi-1-2021/1607-la-lex-informatica/file>, 327; Olia Kanevskaia, 'ICT Standards Bodies and International Trade: What Role for the WTO?' (2022) 56 JWT 429, 432.

[220] Cf Olia Kanevskaia, 'ICT Standards Bodies and International Trade: What Role for the WTO?' (2022) 56 JWT 429, 432-433.

[221] Standardisation Regulation, Article 3(6).

pertaining to three fields of application of AI, namely industrial automation, mobility/logistics, and medicine.[222]

Finally, private norms on AI nowadays stem even from outside of professional and trade organisations. Indeed, technology companies like Microsoft[223] are increasingly publishing ethical guidelines or principles on AI as a mode of self-regulation.[224] Sometimes, companies provide professional guidelines and instructional material which delve into granular norms for engineers.[225] Furthermore, scholars have repeatedly shed light on the normative effects of the code itself and ultimately argued that it produces a similar effect to the law by regulating users' behaviour.[226] In fact, the design of software and digital infrastructures like platforms or social networks influences their use, and thus 'the coder acts as a regulator.'[227] Hence, decisions taken by companies, engineers, and technical experts have also an impact on the governance of AI.

In light of the foregoing, the regulation of AI is largely shaped by industrial actors. Against this background, it is of fundamental importance that ethical and legal concerns are duly considered by stakeholders.[228] Moreover, companies and professionals shall be held responsible for their decisions, such as decisions about datasets,[229] design choices, and model implementation.[230]

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[222] DIN and DKE, 'German Standardization Roadmap on AI' <https://www.din.de/resource/blob/772610/e96c34dd6b12900ea75b460538805349/normungsroadmap-en-data.pdf>.

[223] Microsoft, 'Microsoft Responsible AI Standard, v2. General Requirements' (2022) <https://query.prod.cms.rt.microsoft.com/cms/api/am/binary/RE4ZPmV> accessed 4 November 2022.

[224] Urs Gasser and Carolyn Schmitt, 'The Role of Professional Norms in the Governance of Artificial Intelligence' in Markus D Dubber, Frank Pasquale and Sunit Das (eds), *The Oxford Handbook of Ethics of AI* (OUP 2020), 145.

[225] *Ivi*, 152. The Authors make the example of Microsoft's Guidelines on Conversational AI: Microsoft, *Responsible Bots: 10 Guidelines for Developers of Conversational AI* (November 4, 2018) <https://www.microsoft.com/en-us/research/uploads/prod/2018/11/Bot_Guidelines_Nov_2018.pdf>.

[226] See *ex multis* Lessig's seminal work: Lawrence Lessig, *Code and Other Laws of Cyberspace* (Basic Books 1999); see also *id.*, *Code version 2.0* (Basic Books 2006) and *id.*, 'Law Regulating Code Regulating Law' (2003) 35 Loy U Chi LJ. 1. Cf Joel R Reidenberg, '*Lex Informatica*: The Formulation of Information Policy Rules through Technology' (1998) 76 Tex L Rev 553; Leon E Trakman, 'From the Medieval Law Merchant to E-Merchant Law' (2003) 53 U Toronto LJ 265; Lena Ulbricht and Karen Yeung, 'Algorithmic Regulation: A Maturing Concept for Investigating Regulation of and through Algorithms' (2022) 16 Regulation & Governance 3. In the Italian scholarship cf Gian Luca Conti, 'La *lex informatica*' (2021) 14 Osservatorio sulle fonti 318 <https://www.osservatoriosullefonti.it/mobile-saggi/mobile-numeri-speciali/speciale-l-impatto-delle-dinamiche-transnazionali-sui-sistemi-normativi-1-2021/1607-la-lex-informatica/file>; Cristina Poncibò, '*Lex mercatoria ex machina*' [2021] MediaLaws 69 <https://www.medialaws.eu/wp-content/uploads/2022/01/3-21-Poncibo.pdf>.

[227] Thibault Schrepel, 'Law + Technology' (2022) Stanford CodeX Working Paper <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4115666> accessed 4 November 2022, 9.

[228] Cf Clothilde Goujard and Gian Volpicelli, 'Harmful AI Rules: Now Brought to You by Europe & Co., Inc.' Politico (31 October 2022) <https://www.politico.eu/article/harmful-ai-rules-european-union-corporate-influence/> accessed 4 November 2022.

[229] Mehtab Khan and Alex Hanna, 'The Subjects and Stages of AI Dataset Development: A Framework for Dataset Accountability' (2023) 19 Ohio St Tech. LJ (forthcoming) <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4217148>; David Lehr and Paul Ohm, 'Playing with the Data: What Legal Scholars Should Learn About Machine Learning' (2017) 51 UC Davis LRev 653.

[230] Virginia Dignum, *Responsible Artificial Intelligence: How to Develop and Use AI in a Responsible Way* (Springer 2019), 101-105 and 119; Joshua A Kroll and others, 'Accountable Algorithms' (2017) 165 UPaLRev 633.

6 The role of standards in liability litigation

Building on the previous sections, the role of standards and professional norms on AI for private law is now investigated. Specifically, the question is whether and how these private rules can help mitigate the uncertainty which characterises the assessment of liability for AI-related damage.

6.1 Challenges for liability from AI

AI technologies are pervasive. Therefore, damage caused by, or related to, the functioning of AI systems is likely to become very frequent. Nonetheless, the application of existing remedies of tort law and of contract law to such scenarios is not straightforward. Briefly, the judicial assessment of the elements of negligence and causation in tort law claims is challenged by distinctive features of many AI systems.[231] First, there is a certain lack of predictability as far as the reaction of the software to unseen instances is concerned.[232] Whereas it is common to other automated or dangerous activities, this issue is exacerbated by machine learning approaches[233] since they enable software to autonomously determine the class labels and decision trees for unseen inputs.[234] However, AI is not infallible. The erroneous output might be due to human decisions or errors at the developing stage, including modelling, pre-processing, training, validating, and testing. However, it might also depend on the way downstream deployers use the system and adapt it.[235] Finally, it is possible that a particular outcome was reasonably unforeseeable and unavoidable. In this latter case, then, humans are not at fault.[236]

Even in the case of a human error, it is challenging to identify the responsible person(s) for manifold reasons. First, not every AI-driven decision-making process is easily explainable, as some models are inherently obscure on how the data is processed and internal decisions are taken by the system (the so-called 'black box effect').[237]

[231] For a thorough analysis of said characteristics and of their impact on tort law institutes see Expert Group on Liability and New Technologies – New Technologies Formation (EG-NFT), 'Liability for Artificial Intelligence and Other Emerging Technologies' (European Commission 2019) <https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupMeetingDoc&docid=36608>. See also European Commission, 'Report on the safety and liability implications of Artificial Intelligence, the Internet of Things and robotics' COM (2020) 64 final.
[232] Christiane Wendehorst, 'Strict Liability for AI and Other Emerging Technologies' (2020) 11 JETL 150, 151-152.
[233] See Zhao Yan Lee, Mohammad Ershadul Karim and Kevin Ngui, 'Deep Learning Artificial Intelligence and the Law of Causation: Application, Challenges and Solutions' (2021) 30 Info & Comm Tech L 255.
[234] Christiane Wendehorst, 'Strict Liability for AI and Other Emerging Technologies' (2020) 11 JETL 150, 151-152.
[235] Lilian Edwards, 'Regulating AI in Europe: Four Problems and Four Solutions' (Ada Lovelace Institute 2022) <https://www.adalovelaceinstitute.org/report/regulatingai-in-europe/>, 6.
[236] Cf Andreas Matthias, 'The responsibility gap: ascribing responsibility for the actions of learning automata' (2004) 6 Ethics and Information Technology 175.
[237] See eg Frank Pasquale, *The Black Box Society: The Secret Algorithms That Control Money and Information* (Harvard University Press 2015); Davide Castelvecchi, 'Can We Open the Black Box?' (2016) 538 Nature 20.

Second, the AI pipeline can be particularly complex as it involves various professionals, such as computer scientists, engineers, software developers, policymakers, legal experts, business representatives (the so-called 'many hands problem'). Additionally, individuals outside of established professions and even high-tech amateurs might be involved in the development of AI-based technologies.[238] These characteristics of AI complicate further the judicial assessment of the elements of fault and causation.[239] Similarly, the assessment of product defects under the PLD is also hurdled.[240]

On top of that, most AI systems are open, ie subject to frequent or continuous change after they are placed on the market. Moreover, they are data-driven which means that software needs to be fed with data. Updates and inputs can be tossed by third parties like hackers though. Hence, AI systems are exposed to cybersecurity risks. Furthermore, said individuals might find ways to access stored data, particularly personal data. Moreover, sensors that captures data might malfunction, thus compromising the input and ultimately the functioning of the entire AI system.

In sum, AI systems are complex and vulnerable. Besides, even a minor flaw might have repercussions on a wide scale since many AI systems combine several interconnected AI units.[241] Hence, if a single unit is flawed, the entire hive will be so as well. In light of the foregoing, the application of traditional principles of tort law is not clear-cut. Moreover, the efficacy of legal remedies might be thwarted by evidentiary burdens.

Against this backdrop, the Commission was urged to intervene by the Parliament.[242] Eventually, the Commission put forward two proposals, respectively one for a revision of the PLD and the other one for an AI Liability Directive. Interestingly, in its proposed AI Liability Directive, the Commission departed significantly from the Parliament's suggestions. Indeed, the Commission addressed the problem of AI-related damage mainly by introducing duties of disclosure about AI systems and rebuttable presumptions of fault, causation, and defectiveness. Instead, the Parliament proposed a risk-based liability regime for operators of AI systems, including users and other frontend controllers as well as backend operators.[243] This means that the liability

[238] Urs Gasser and Carolyn Schmitt, 'The Role of Professional Norms in the Governance of Artificial Intelligence' in Markus D Dubber, Frank Pasquale and Sunit Das (eds), *The Oxford Handbook of Ethics of AI* (OUP 2020), 144 f.
[239] Moreover, the element of damage is also challenged as some type of loss related to AI, such as purely economic loss or data loss, might not meet the definition of damage under national tort law regimes. Notwithstanding the importance of this issue, it is not relevant to the present contribution.
[240] See fn 19.
[241] See Gunther Teubner, 'Digital Personhood? The Status of Autonomous Software Agents in Private Law' [2018] Ancilla Iuris 35, 75-77.
[242] Resolution of 20 October 2020 with recommendations to the Commission on a civil liability regime for artificial intelligence [hereinafter, 'Resolution']. For a critical analysis of the Resolution see Henrique Sousa Antunes, 'Civil Liability Applicable to Artificial Intelligence: A Preliminary Critique of the European Parliament Resolution of 2020' (December 2020) <http://dx.doi.org/10.2139/ssrn.3743242> and Gerhard Wagner, 'Liability for Artificial Intelligence: A Proposal of the European Parliament' in Horst Eidenmüller and Gerhard Wagner, *Law by Algorithm* (Mohr Siebeck 2021).
[243] Resolution, Annex, Article 3, lit. *e* and *f*.

regime depended on the gravity of the risk posed by the specific AI system. Accordingly, operators of high-risk AI systems were strictly liable for damage, ie regardless of any culpable behaviour on their behalf.[244] Differently, operators of AI systems that posed an 'average' level of risk were subject to a fault liability regime, coupled with a presumption of fault.[245]

Even though the Commission's proposals address some of the major problems related to the assessment of extracontractual liability for AI, the role of national courts remains crucial. In fact, judges are required to establish whether the specific circumstances of the case justify the issuance of an order of disclosure or the application of a presumption. Hence, they need to evaluate the difficulties faced by claimants in proving the elements of the cause of action in relation to the technical and scientific complexity of the issue on a case-by-case basis. More importantly, the proposals do not tackle the problem addressed in the present contribution. As they do not provide any guidance for defining the standard of care of the actors involved in the AI pipeline, this task is still entirely in the hands of domestic courts.

In addition to extracontractual liability, contractual liability is a thorny issue too. Where contract performance is partially or entirely automated with AI systems, the result does not only depend on the conduct of the parties but is also determined by the performance of the AI system. Therefore, courts must determine whether and under what conditions parties who use AI systems to perform their obligations are liable toward their contractual partners.[246]

6.2 The 'reasonable AI' and the 'reasonable AI operator'

Against this backdrop, standards and professional norms might help deal with uncertainty. The role of standards in the context of liability for AI-related damage has been largely overlooked hitherto though. Nevertheless, building on previous work by van Leeuwen,[247] Veale and Borgesius posit that AI standards might be considered in national tort cases.[248]

In Sections 3 and 4 I made the point that these private norms enter the courtrooms via various mechanisms. Transferring this line of reasoning to the AI context, standards

[244] Resolution, Annex, Articles 4-7.
[245] Resolution, Annex, Articles 8-9.
[246] André Janssen, 'AI and Contract Performance' in Larry A DiMatteo, Cristina Poncibò and Michel Cannarsa (eds), *The Cambridge Handbook of Artificial Intelligence* (CUP 2022); Tycho J de Graaf and Iris S Wuisman, 'Contractual Liability for the Use of AI under Dutch Law and EU Legislative Proposals' in Bart Custers and Eduard Fosch-Villaronga (eds), *Law and Artificial Intelligence: Regulating AI and Applying AI in Legal Practice* (Springer 2022).
[247] Barend van Leeuwen, *European Standardisation of Services and Its Impact on Private Law: Paradoxes of Convergence* (Hart Publishing 2017), 20-21.
[248] Michael Veale and Frederik Zuiderveen Borgesius, 'Demystifying the Draft EU Artificial Intelligence Act. Analysing the Good, the Bad, and the Unclear Elements of the Proposed Approach' (2021) 22 Computer L Rev Int'l 97, 111.

might inform the duty of care of professionals in the AI field and of operators of AI systems for liability purposes. Standards and professional norms will have an evidential role in product liability cases, fault liability cases, and contractual cases.[249] Furthermore, they will likely guide judicial interpretation of negligence and conformity.[250]

At the developing stage, harmonised standards and other professional norms will *de facto* set the rules of the game in spite of their non-binding nature. For instance, best practices are already emerging in the field of automated driving.[251] The responsibility of AI providers is likely to extend beyond the mere supply of products and services. It has been observed that some professional norms tentatively address the problem of the potential behaviour of autonomous systems and recommend a 'frequent reassessment' of the technology when the risk is uncertain.[252]

Suggestively, Barfield theorises the emergence of a 'reasonably prudent algorithm' standard of care in relation to liability for damage caused by robots.[253] Accordingly, he encourages courts to focus on the machine learning software and algorithms controlling a robot in determining liability, 'especially if no human was aware of the robot's activities or was knowledgeable of the workings of the algorithms controlling the robot's behaviour.'[254] For this, Barfield proposes to use performance measures to evaluate the algorithm in court. Performance measures are measurements usually conducted by developers of AI systems to test a trained model. The choice between

[249] Cf Barend van Leeuwen, *European Standardisation of Services and Its Impact on Private Law : Paradoxes of Convergence* (Bloomsbury Publishing 2017), 154-155, 169.

[250] This thesis is supported in the literature with regard to the related field of cybersecurity. See Shackelford and others, 'Toward a Global Cybersecurity Standard of Care? Exploring the Implications of the 2014 NIST Cybersecurity Framework on Shaping Reasonable National and International Cybersecurity Practices' (2015) 50 Tex Int'l LJ 305, 341-46; Tari Schreider, *Cybersecurity Law, Standards and Regulations* (2nd edn, Rothstein Publishing 2020), 49: 'Courts will look at nationally or internationally accepted cybersecurity standards to define your duty of care.'

[251] For international harmonisation efforts on automated driving regulations see United Nations Economic Commission for Europe, 'Framework Document on Automated/Autonomous Vehicles (Updated)' <https://unece.org/sites/default/files/2022-02/FDAV_Brochure%20-%20Update%20Clean%20Version.pdf>, accessed 16 July 2022. For an overview of relevant standards see Martin Ebers, 'Civil Liability for Autonomous Vehicles in Germany' (2022) <https://ssrn.com/abstract=4027594>, 18. For a thorough assessment of the safety components of autonomous vehicles see Hannah YeeFen Lim, *Autonomous Vehicles and the Law. Technology, Algorithms and Ethics* (Edward Elgar 2018), 20-81. More specifically, the Author identifies as vital components on-board multiple redundant overlapping detection systems, namely, global positioning systems, high-definition maps, lidars, radars, cameras, and infrared systems. There must of course be sufficient numbers of these devices and they must be appropriately positioned on the autonomous vehicle. Finally, the Author recommends installing appropriate warning alerts and effective hands-on-steering-wheel mechanisms to ensure drivers are in fact in control of the vehicle.

[252] Urs Gasser and Carolyn Schmitt, 'The Role of Professional Norms in the Governance of Artificial Intelligence' in Markus D Dubber, Frank Pasquale and Sunit Das (eds), *The Oxford Handbook of Ethics of AI* (OUP 2020), 151. The Authors make the examples of Microsoft's 'Future Computed' and of the Code of Ethics of the Association for Computing Machinery-ACM: Microsoft, *The Future Computed* (Microsoft Corporation 2018) <https://1gew6o3qn6vx9kp3s42ge0y1-wpengine.netdna-ssl.com/wp-content/uploads/ 2018/02/The-Future-Computed_2.8.18.pdf>, 56; Association for Computing Machinery 'ACM Code of Ethics and Professional Conduct' (July 2019) <https://www.acm.org/code-of-ethics>.

[253] Woodrow Barfield, 'Liability for Autonomous and Artificially Intelligent Robots' (2018) 9 Paladyn, Journal of Behavioral Robotics 193, 198, 201.

[254] *Ivi* at 194.

different kinds of performance measures depends on the specific class of tasks the robot is assigned. In fact, some measures score the average of correct predictions (accuracy), whereas others score the average of true positives (precision) or their ratio (recall). In fact, depending on the specific application, false positives might be less dangerous than false negatives and vice versa. Hence, with the help of experts, courts will have to shift through such measures.

Piercing the veil of the 'reasonable algorithm' formula, low scores on relevant performance measures can provide evidence of negligence in designing and developing the AI. It might also constitute evidence of defects in product liability, or of lack of conformity under contract law. After all, many errors by the machine are the perpetuation of human errors.[255] Therefore, performance measures are best practices that might help mitigate uncertainty.

Perhaps the main limitation of this approach is that not every algorithmic decision-making process is explainable. This notwithstanding, there are always some value choices that are made by humans, including the choice of whether to use an opaque model rather than an explainable one and even the decision to resort to an AI system to perform a given task in the first place. Arguably, these decisions should be challengeable by aggrieved parties. Furthermore, producers and sellers should be liable for their misleading statements if they encouraged overconfidence in the machine's capability which resulted in an accident.[256]

As for the liability of those who deploy AI systems, it must first be considered that AI systems can be operated by different users of various knowledge and expertise. AI systems can be operated by professionals whose main business purpose is the operation of digital systems. However, they can also be operated by non-professionals, including both consumers and professionals in fields other than AI who employ AI-

[255] For instance, this is true for algorithmic bias or discrimination: Maarten Buyl and others, 'Tackling Algorithmic Disability Discrimination in the Hiring Process: An Ethical, Legal and Technical Analysis', *2022 ACM Conference on Fairness, Accountability, and Transparency* (Association for Computing Machinery 2022) <https://dl.acm.org/doi/pdf/10.1145/3531146.3533169>, 1071.

[256] For instance, Tesla has been facing several lawsuits for false advertising for misrepresenting their vehicles' features and capabilities since 2016. In China, the driver of a Tesla Model S died in a crash that occurred while the vehicle was in Autopilot mode. The driver's family filed a lawsuit for false advertising accusing Tesla of exaggerating Autopilot's capabilities: Rose Yu, 'Family of Driver Killed in Tesla Crash in China Seeks Court Investigation' *The Wall Street Journal* (20 September 2016) <https://www.wsj.com/articles/family-of-driver-killed-in-tesla-crash-in-china-seeks-court-investigation-1474351855> accessed 16 July 2022. In the same vein, in July 2020 the Regional Court Munich I (file no. 33 O 14041/19) prohibited Tesla from using the term 'autopilot' and other misleading statements on its German website advertising the driver assistance features of its electric cars pursuant to German competition law: Dirk Seiler, Nina Ballwanz and Nathalie Thorhauer, 'Munich Regional Court Prohibits Tesla's Advertising Claims for Its Electric Cars' (Herbert Smith Freehills, 12 August 2020) <https://hsfnotes.com/cav/2020/08/12/munich-regional-court-prohibits-teslas-advertising-claims-for-its-electric-cars/> accessed 16 July 2022. Similarly, in Santa Barbara, California, the purchasers of a Tesla Model S sued the company for fraud as the car was misleadingly advertised as fully self-driving: see Tyler Hayden, 'Santa Barbara Brothers Accuse Tesla of False Advertising' *The Santa Barbara Independent* (22 July 2021) <https://www.independent.com/2021/07/22/santa-barbara-brothers-accuse-tesla-of-false-advertising/> accessed 16 July 2022.

driven solutions to automate the execution of their tasks. Paradigmatic examples are those of algorithmic credit scoring,[257] robo-advising,[258] AI-driven detecting tools for disease diagnosis, and robotic surgery.[259]

With regard to devices of a type for which users are already subject to a strict liability regime under the majority of legal systems like motor vehicles, it is arguably preferable to apply strict liability regardless of whether a device contains AI or not in the light of the principles of technology neutrality and legal certainty.[260]

In other cases, instead, ordinary fault liability may be appropriate. Hence, it must be determined whether the operator fulfiled the standard of care of a reasonable person of comparable education and expertise. The Commission did not provide any criteria for the assessment of fault in its proposal for an AI Liability Directive. In its Resolution of 2020, the Parliament suggested that fault should arise from failure to maintain the system or to oversee its functioning. These norms are quite vague though and thus it is unclear how courts and experts are going to interpret them in practice.

Where the AI system is operated by a consumer for his or her private activities, the user should follow the instructions and take the required precautions. This is without prejudice to the fact that the provider should minimise the risks of the system, taking into account the knowledge and expertise of the intended user.[261] For instance, where the producer or the seller instilled too much confidence in the system with their statements,[262] the consumer could be excused for not taking the adequate precautions.

Where the operator is also a professional in the AI field, it can be reasonably expected that judges will follow standards delivered by standardisation organisations and other professional norms. Hence, these private norms will represent the benchmark for the 'reasonable operator' who is also a professional in the AI field.[263]

For operators who are not professionals in the AI field, but who use AI systems to perform their professional activities, safety standards and best practices are likely to

[257] Julie Goetghebuer, 'AI and Creditworthiness Assessments: The Tale of Credit Scoring and Consumer Protection. A Story with a Happy Ending?' in Jan De Bruyne and Cedric Vanleenhove (eds), *Artificial Intelligence and the Law* (1st edn, Intersentia 2021); Noah Vardi, *Creditworthiness and 'Responsible Credit': A Comparative Study of EU and US Law* (Brill 2022), 97-104.

[258] Marika Salo-Lahti, 'Good or Bad Robots? Responsible Robo-Advising' (2022) 33 European Business LRev 671.

[259] See PwC, 'Study on eHealth, Interoperability of Health Data and Artificial Intelligence for Health and Care in the European Union' (European Commission 2021) <https://digital-strategy.ec.europa.eu/en/library/artificial-intelligence-healthcare-report>, 39-42.

[260] This is the position of Wendehorst: Christiane Wendehorst, 'Strict Liability for AI and Other Emerging Technologies' (2020) 11 JETL 150.

[261] AI Liability Directive, Recital 29.

[262] Cf Miriam Buiten, Alexandre de Streel and Martin Peitz, 'EU Liability Rules for the Age of Artificial Intelligence' (Centre on Regulation in Europe - CERRE 2021) <https://cerre.eu/publications/eu-liability-rules-age-of-artificial-intelligence-ai/>, 35.

[263] As pointed out by Herbosch, 'if the system user adheres to AI soft law standards, this may serve as another abstract indicator of diligence' (Maarten Herbosch, 'The Diligent Use of AI Systems: A Risk Worth Taking?' (2022) 11 EuCML 14, 21).

emerge in the relevant communities.[264] It is also possible that they will be asked to undergo some training prior to using AI technology. Arguably, professionals need to carefully validate the output of these recommendation systems, perform risk assessments, and control the operation of the system as much as possible. Whilst these precautions could undermine objectives of time and resource saving, they are essential to a human-centred approach to AI.[265] This is notwithstanding the fact that human oversight suffers from practical limitations.[266] For instance, humans might misjudge a certain output as flawed because of their inability to grasp the underlying correlations.

Whilst I suggest that standards might help courts define the required standard of care, judges need also to consider whether the specific circumstances of the case justify a departure from established standards and good practices. Moreover, as pointed out in Section 1, standardisation is in a complicated relationship with innovation.[267] The possible tension between AI standardisation and innovation should be taken into account by domestic courts.[268] When the defendant can demonstrate the adequacy and validity of a technique or practice other than those laid down in the relevant standards, his/her fault should not depend on deviation from said standards. Otherwise, innovation would be significantly hampered.

Notably, AI systems are characterised by different levels of automation, from manual teleoperation to fully autonomous systems. This might complicate further the assessment of the degree of control retained by operators in each case. Interestingly, some criteria in this regard are already available. The Society of Automotive Engineers (SAE International), a professional association, defined six levels of automation from 0 to 5 in its standard on Levels of Driving Automation.[269] Whereas they pertain to automotive, they might provide guidance also for other sectors. For instance, they inspired the recent classification of surgery automation by Fosch-Villaronga and

[264] See for instance the recent study by Fosch-Villaronga and others on a liability attribution framework for robotic surgery: Eduard Fosch-Villaronga and others, 'The Role of Humans in Surgery Automation Exploring the Influence of Automation on Human–Robot Interaction and Responsibility in Surgery Innovation' [2022] International Journal of Social Robotics <https://doi.org/10.1007/s12369-022-00875-0>.

[265] Ursula von der Leyen, 'Shaping Europe's digital future: op-ed by Ursula von der Leyen, President of the European Commission' (19 February 2020); Commission, 'White Paper on Artificial Intelligence' COM (2020) 65 final; High-Level Expert Group on Artificial Intelligence (AI HLEG), 'Assessment List for Trustworthy Artificial Intelligence' (Commission 2020) <https://digital-strategy.ec.europa.eu/en/library/assessment-list-trustworthy-artificial-intelligence-altai-self-assessment>, 7-8; Committee of Ministers, 'Recommendation CM/Rec(2020)1 of the Committee of Ministers to member States on the human rights impacts of algorithmic systems'.

[266] Ben Green and Amba Kak, 'The False Comfort of Human Oversight as an Antidote to A.I. Harm' [2021] Slate <https://slate.com/technology/2021/06/human-oversight-artificial-intelligence-laws.html> accessed 20 July 2022.

[267] Zongjie Xie and others, 'Standardization efforts: The relationship between knowledge dimensions, search processes and innovation outcomes' (2016) 48-49 Technovation 69, 75-77.

[268] I am indebted to one anonymous reviewer for pointing out this issue.

[269] SAE International J3016_202104 'Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles' <https://www.sae.org/standards/content/j3016_202104/> accessed 4 November 2022, last revised 30 April 2021.

others, based on autonomy levels and the role of humans.[270] Most importantly, they have already made their way from soft to hard law. In fact, the German Road Traffic Act[271] contemplates specific provisions for accidents caused by autonomous vehicles. More specifically, it distinguishes between vehicles of SAE levels 3 and 4. The reference to the SAE standards bears direct consequences on the liability of operators. For vehicles of SAE level 3, drivers are still in control of the car and are presumed liable in case of accidents. For vehicles of SAE level 4 instead, the German law introduces the 'technical supervisor' who is entrusted with deactivating the system and approving an alternative driving manoeuvre. The supervisor, who can be the driver or another natural person, is liable for fault under the general conditions of § 823(1) BGB[272] and must fulfil specific duties and requirements that will be specified by the Federal Ministry of Transport and Digital Infrastructure.[273]

Finally, the decision to use an AI system for performing a given task in the first place should also be subject to scrutiny. Vice versa failure to use technology might become a violation of a legal standard. For instance, in some cases, it may be considered more diligent to use AI rather than not. Interestingly, in *Cass v. 1410088 Ontario Inc.*, the Superior Court of Ontario capped the costs award by reasoning that counsel's preparation time would have been significantly reduced if AI technology had been employed.[274] Arguably, a potential legal obligation to adopt a certain technology might depend on the state of the art and on available resources.

Mutatis mutandis these arguments bear relevance to contractual liability too. Conformity of digital products and services under the SGD and the DCSD, satisfactory performance, unforeseeability, and unpredictability of impediments: all these elements might be interpreted in the light of existing and upcoming standards. For instance, the forthcoming ISO standard on 'Systems and software Quality Requirements and Evaluation (SQuaRE)' might be a good candidate for evaluating the conformity of software to contractual and legal requirements.

[270] Eduard Fosch-Villaronga and others, 'The Role of Humans in Surgery Automation Exploring the Influence of Automation on Human–Robot Interaction and Responsibility in Surgery Innovation' [2022] International Journal of Social Robotics <https://doi.org/10.1007/s12369-022-00875-0>, 3-6.

[271] *Straßenverkehrsgesetz*. For an English version see <https://www.gesetze-im-internet.de/englisch_stvg/index.html> accessed 20 July 2022.

[272] *Bürgerliches Gesetzbuch*, ie the German Civil Code. § 823(1) BGB is the cornerstone of German tort law, and it states that any person who, intentionally or negligently, unlawfully injures the life, body, health, freedom, property, or another right of another person, is liable for compensation to the aggrieved person.

[273] For an extensive overview see Martin Ebers, 'Civil Liability for Autonomous Vehicles in Germany' (2022) <https://ssrn.com/abstract=4027594>.

[274] *Cass v. 1410088 Ontario Inc.*, 2018 ONSC 6959 (CanLII) [34], available at <https://www.canlii.org/en/on/onsc/>.

7 Conclusions

The present research has investigated the link between standards on AI and liability. For this purpose, the normative force of standards and professional norms and their relevance to liability disputes have been first demonstrated. The extensive reach of standards and professional norms onto private relationships reinforces constitutional concerns about standardisation.[275] Standards are ubiquitous in everyday life and also in numerous areas of public policy.[276] European standards are essential to the development of the internal market[277] and eventually means for the global reach of EU law.[278] Indeed, they not only shape global markets but also function as mechanisms of regulatory and policy diffusion.[279] Hence, the ample leeway that is usually given to ESOs due to their expertise must be reconciled with the essential administrative and constitutional safeguards of law-making to make sure that societal needs are taken into account by standards makers.[280] Furthermore, the legitimacy of standards is contested due to a lack of transparency and involvement of consumers and SMEs. Similar concerns emerge with respect to international and national standardisation, particularly in the field of ICT standardisation, which is essential to AI.[281]

Next, the framework of AI standardisation has been pinpointed. Accordingly, the European approach to AI standardisation in the AI Act has been thoroughly analysed and an overview of international and national standardisation initiatives has been provided. A complex patchwork of rules, standards, and other professional norms laid down by professional associations and companies has emerged. This overview unveiled the pivotal role played by industry actors in regulating AI. In this regard, scholars

[275] See eg Eric J Iversen, Thierry Vedel and Raymund Werle, 'Standardization and the Democratic Design of Information and Communication Technology' (2004) 17 Knowledge, Technology & Policy 104; Olia Kanevskaia, 'ICT Standards Bodies and International Trade: What Role for the WTO?' (2022) 56 JWT 429. For proposals of alternative regulatory models see Rob van Gestel and Hans-W Micklitz, 'European Integration through Standardization: How Judicial Review Is Breaking down the Club House of Private Standardization Bodies' (2013) 50 CML Rev 145.
[276] Cf *Stichting Rookpreventie*, Opinion of AG Saugmandsgaard Øe, para 79.
[277] ibid and Standardisation Regulation, Recital 5.
[278] Standardisation Regulation, Recital 6; cf Marta Cantero Gamito and Hans-W Micklitz (eds), *The Role of the EU in Transnational Legal Ordering: Standards, Contracts and Codes* (Edward Elgar 2020); Hans-W Micklitz, 'The Internal vs. the External Dimension of European Private Law – A Conceptual Design and a Research Agenda' EUI WP 2015/35, 10-11; Rodrigo Vallejo, 'The Private Administrative Law of Technical Standardization' (2021) 40 YEL 172.
[279] Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 421.
[280] See Case C-9/56 *Meroni & Co., Industrie Metallurgiche, SpA v High Authority of the European Coal and Steel Community* [1958] ECR 133. According to the *Meroni* formula, in the EU system delegation of rule-making powers is allowed only if they are of a purely executive nature, if appropriate procedural guarantees are in place, and if judicial review of delegates' decisions is ensured. For a critique of the New Approach framework in light of the *Meroni* doctrine see Takis Tridimas, 'Community Agencies, Competition Law, and ECSB Initiatives on Securities Clearing and Settlement' (2009) 28 YEL 216.
[281] Marta Cantero Gamito, 'Europeanization through Standardization: ICT and Telecommunications' (2018) 37 YEL 395, 431.

highlight the need for cooperation between scientists, developers, policymakers, and ethicists in light of a 'Responsible AI' approach to innovation.[282]

Finally, the article dealt with the problem of liability for AI from the angle of negligence and conformity. Courts deal with these general clauses by interpreting them in the light of the specific circumstances of the case. In highly technical cases, courts count on their own experience and on the advice of experts. Their determinations are based on empirically observable data.[283] Now, the problem with AI-related damage is that there is not much data on which courts and experts can rely. Uncertainty is unavoidable.[284] Moreover, the features of AI significantly complicate the assessment of human responsibility for negative outputs. The limitations of established tort law and contract law *vis-à-vis* AI are the objects of lively scholarly and political debate.

In this respect, this article has explored the possibility of using standards and professional norms to mitigate this uncertainty. Standards are no panacea for sure. The tentative conclusion though is that standards provide a valuable yardstick against which the behaviour of developers and deployers can be evaluated. Furthermore, for operators of AI systems, I have distinguished between professionals in the field of AI, professionals in fields other than AI, and consumers. Arguably, their respective duty of care should mirror their different expertise. Therefore, the Parliament's proposal is not satisfactory insofar as it establishes a cross-cutting strict liability regime for all operators of high-risk AI systems, including consumers. The decision of the Commission to reject said suggestion in its proposal for an AI Liability Directive must thus be welcomed. Finally, it may be possible that courts will find professionals liable for failure to use AI systems in performing their tasks.

Like standards, AI is ubiquitous. Many AI systems are also autonomous, which means that once activated, they provide outputs without further input from humans. At first glance, the autonomy of AI might exclude the relevance of human behaviour. Instead, we make the point that AI is shaped by those who develop and deploy them, at least to a certain extent. Indeed, standards are flourishing precisely to guide humans in the creation and use of AI systems. Arguably, before providing answers, AI standards help pose the right questions. Therefore, the quest for liability for AI involves a set of questions about whether, how, and with what safeguards human activity and decision-making authority are transferred to a machine.[285]

[282] Virginia Dignum, *Responsible Artificial Intelligence: How to Develop and Use AI in a Responsible Way* (Springer 2019).
[283] Alan D Miller and Ronen Perry, 'The Reasonable Person' (2012) 87 NYULR 323, 371.
[284] Cf F Patrick Hubbard, '"Sophisticated Robots": Balancing Liability, Regulation, and Innovation' (2014) 66 Fla L Rev, 1803, 1861: "Where the tort system continues to use traditional fault approaches to address the control, use, and service of robots, the application of concepts like reasonable care will change where increasingly sophisticated robots are involved because the legal system measures the level of skill reasonably required by the nature of the activity undertaken."
[285] Simon Chesterman, 'Artificial Intelligence and the Problem of Autonomy' (2020) 210 Notre Dame Journal on Emerging Technologies 210, 249.

Roberto Dini – Valentina Piola*

HOW TO REDUCE COMPLEXITY IN THE LICENSING LANDSCAPE OF STANDARDISED TECHNOLOGY

Abstract

The innovation ecosystem is a fundamental driver of economic development and societal wellbeing. For this reason, key innovations such as 5G and IoT (Internet of Things), which are expected to bring significant benefits to our society and the world economy, should be supported by a standardization effort that allows different infrastructures, services and devices to interoperate in order to facilitate the diffusion and widespread deployment of new technologies on the market and avoid the risk of lock-in into competing, proprietary technologies.

Standardization is fundamental to allow interoperability and the worldwide success of new technologies. Standardization bodies have the technical and administrative task to choose the best technology made available by innovators who participate in the standardization efforts. The latter are then rewarded for their contributions to standardization through patent licensing. However, with the ever-increasing complexity in technological standards, licensing activities are often quite complicated, and this causes friction between patent owners and implementers.

The article proposes how to solve this complex situation, analysing the role of the FRAND commitment; which factors to be considered when setting a FRAND royalty rate; and how the different interests of innovators (patent owners/licensors) and implementers (licensees) should be well balanced, by means of patent pooling, or injunctions, thus promoting the level playing field that is at the core of fair market competition

This article offers insights from leading market participants who have engaged in licensing of standard essential patents, are developing frameworks to address the challenges of licensing of new technologies covering Internet of Things and application of cellular technologies in the automotive sector; and have actively litigated cases that help shape today's negotiating process for SEPs.

The first part of this article describes Europe's ambitions in its Digital Agenda and sets out the Inventive Loop (a company's R&D resulting in patented innovations that when standardised can be licensed for royalties that in turn fund further R&D). It then summarizes the exclusive right available to a patent owner, subject to compulsory licensing and to the holder's FRAND promise if his innovation is essential to a standard. The article goes on to examines different methodologies for calculating a FRAND royalty rate and its application to new industrial sectors, such as through the adoption by automakers of new cellular mobility technologies.

The final part of the article discusses two mechanisms to promote SEP licensing: the judicially created framework for SEP licensing negotiations (as recently set out in Sisvel v Haier) and in patent pools. It

* Roberto Dini, Founder of Sisvel, and Valentina Piola, Licensing and Program Manager at Sisvel. The views expressed in this article are those of the authors and not necessarily those of the company. The authors are grateful for the comments on earlier versions of this article from colleagues and from the anonymous reviewers. They may be contacted at press@sisvel.com.

assesses a further recent judicial development – anti-suit injunctions – where the exercise of jurisdiction by one court may be harmful to the sovereignty of another. Alternative dispute resolution processes, such as arbitration, may provide a mechanism to resolve global FRAND licensing disputes and reduce these territorial conflicts. The article notes that standard setting organizations could serve as a platform to foster pool formation and to encourage arbitration.

JEL CLASSIFICATION: K21; L15; O31; O32; O33; O34.

SUMMARY

1 The Importance of Innovation and Global Standards

The information and communications technology (ICT) developed in an innovative ecosystem is a fundamental driver of economic development and societal well-being. The importance of this ecosystem serves as the basis for the objectives outlined in the European Union's Digital Agenda for 2020-2030.[1]

The first Digital Agenda for Europe (2010-2020) focused on allowing better access for consumers and businesses to digital goods and services across Europe, including: simplifying the access to electronic communications; better Internet connectivity for all; and better protection of consumers in telecommunications with legislation on privacy and data protection.

The Covid-19 global shutdown has highlighted the importance of digital tools. In fact, with restrictions in place, businesses and citizens heavily relied on technology and connectivity to carry out their day-to-day economic and social activities. The pandemic accelerated the digital transformation and, thanks to improved digital infrastructure, European society, and our broader society, were all able to keep on working, learning and socializing.

The second and current Digital Agenda for Europe (2020-2030) focuses on the profound changes introduced by digital technologies, the essential role of digital services and markets, and new EU technological and geopolitical ambitions. Based on

[1] For an overview of the work within the institutions of the European Union on ICTs and related fields, see Christina Ratcliff, Barbara Martinello, Vasileiso Litos, 'Digital Agenda for Europe' (July 2022) available at <https://www.europarl.europa.eu/factsheets/en/sheet/64/digital-agenda-for-europe> accessed 11 November 2022.

two strategic communications, namely "Shaping Europe's Digital Future" and "Europe's Digital Decade",[2] the Commission set out the specific actions it will undertake to aid the creation of safe and secure digital services and markets and achieve by 2030 the following four digital objectives:

- Skills: At least 80% of all adults should have basic digital skills and there should be 20 million ICT specialists employed in the EU;
- Businesses: 75% of companies should use cloud computing services, big data and artificial intelligence (AI); more than 90% of EU small and medium-sized enterprises should reach at least a basic level of digital intensity;
- Infrastructure: All EU households should have gigabit connectivity and all populated areas should be covered by 5G; the production of cutting-edge and sustainable semiconductors in Europe should make up 20% of worldwide production; 10.000 climate-neutral highly secure edge nodes should be deployed in the EU, and Europe should have its first quantum computer;
- Public services: All key public services should be available online; all citizens will have access to their e-medical records, and 80% of citizens should use an electronic identity solution.

To achieve these goals, the Digital Europe Program, a new EU funding program for digital technology with a planned overall budget of EUR 7.5 billion for the 2021-2027 period, will provide strategic funding to support projects in five areas: supercomputing, Artificial Intelligence (AI), cybersecurity, advanced digital skills and ensuring a wide use of digital technologies across the industry and society.

A vibrant and effective innovation ecosystem could also be achieved thanks to global standards and standard setting organizations (SSOs), which play a vital role in the definition and dissemination of interoperable standardised technologies such as 5G, Wi-Fi and IoT, which have an enormous impact on our daily lives.

SSOs, such as ETSI (European Telecommunications Standards Institute), IEEE (Institute of Electrical and Electronics Engineers) and DVB (Digital Video Broadcasting) and the newly created standardization body MPAI (Moving Picture, Audio and Data Coding by Artificial Intelligence)[3], are collectors of new ideas from innovators and have the important task of transforming them into public documents, technical reports and specifications to be used by companies to manufacture interoperable products

[2] European Commission, 'Shaping Europe's Digital Future' (2020), available at <https://ec.europa.eu/info/sites/default/files/communication-shaping-europes-digital-future-feb2020_en_4.pdf> accessed 11 November 2022; and Communication from the Commission to the European parliament, the Council, the European Economic and Social Committee and the Committee of the regions 2030 Digital Compass: the European Way for the Digital Decade (COM(2021) 118 final) 9 Mar 2021 available at <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52021DC0118> accessed 11 November 2022.

[3] Information on the recently formed MPAI is available at <https://mpai.community/> accessed 11 November 2022.

worldwide and to provide interoperable services. The benefits of global standards are extensive in areas such as trade, innovation efforts and the creation of true interoperability for products and services.[4]

Global standards remove national and proprietary technical specifications and help to:

- Remove technical barriers, simplifying access to a global market in particular for small and medium-sized enterprises (SMEs) and research institutes;
- Facilitate the introduction of innovative products provided by interoperability between new and existing products, services, and processes;
- Bridge the gap between research and marketable products or services;
- Increase the quality and safety of products for consumers.

1.1 The inventive loop

The current innovation framework based on standards has guaranteed adequate rewards to innovators, making such rewards accessible thanks to intellectual property rights (IPRs) and licensing on fair conditions.

Whilst in the past intellectual property may have been regarded as a legal tool, through exercise of exclusive rights, to create a competitive barrier of entry in the market, today it represents also an important asset for corporate financing. Through licensing activities, revenues from royalties paid by a third party for the use of a patented technology (comprising technologies included in a standard) can be re-invested in new R&D efforts for new innovations. This creates a self-sustaining cycle in which the economic results of previous innovation can fund new research to generate an inventive loop in which intangible assets acquire a tangible economic value.

There are many examples of companies and research institutes that finance all or part of their R&D through the revenues derived from their patent licensing activities. This business model is equally applicable to large or small businesses, in the public or private sector as well as universities. It ensures a continuous flow of capital to support innovation through research and development activities and it is of great importance especially to companies that waive their monopoly rights to make their patented technologies available within standards, opening broad new markets for implementers.

All the activities conducted to develop a new standard require huge investments in terms of R&D. To reward the efforts and expenditure of innovators and their contribution to the standardization process a reasonable financial return must be recognized to them, including public and private R&D companies that are fundamental

[4] See for example European Commission, Benefits of Standards (n.d.), available at <https://ec.europa.eu/growth/single-market/european-standards/standardisation-policy/benefits-standards_en> accessed 11 November 2022.

for long term research. In fact, many companies and innovators agree to participate in standardization activities in view of the potential return on investment (ROI) that they could generate by allowing access to their patented technology. The current standard innovation framework has enabled all stakeholders to take an active role in the innovation and standardization process, facilitating the dissemination of new technologies. Failing to recognise this opportunity may discourage innovators from investing in new research, leading them to avoid participation in the standardization process and instead revert to closed proprietary solutions, which are detrimental to technical progress and societal well-being.[5]

2 SEPs and the FRAND Commitment

Patent law dates back to the fifteenth century when the first Patent Statute issued by the Most Serene Republic of Venice in 1474 granted protection to inventors for ten years for disclosing their inventions. Since its creation, the rationale behind the patent system has remained almost the same: to foster innovation and technical progress and ensure that inventors receive a financial reward for their ingenuity.

A patent is an exclusive right granted (today up to 20 years) to an inventor for disclosing to the public an innovative technical solution. It does not necessarily oblige the patent owner himself to exploit the invention. Rather, it provides the right to exclude others from making, using, selling, or importing the patented invention without the patent owner's permission (license). For this reason, a patent is defined as an exclusionary right.

However, there are cases in which patent owners do not have a complete monopoly over a certain invention. One notable case is when a compulsory license should be given to a party wishing to use a patented invention. A compulsory license provides that the owner must license his patented invention against a determined fee set by law. In essence, under a compulsory license, an individual or company seeking to use a another's IPR can, under certain conditions, do so even without negotiating and finding an agreement with the rights holder but paying for the license a fee decided by a regulatory authority.

This exception to the inventor's right to exclude is acknowledged in the World Trade Organization's agreement on intellectual property — the TRIPS (Trade-Related Aspects

[5] Roberto Dini, Sir Robin Jacob, Eeva K. Hakoranta, Gustav Brismark & Richard Vary, 'Restoring Balance and Clarity in the Innovation Ecosystem' (2021) 41 The Licensing Journal No 8 1; Roberto Dini, 'Fostering Innovation by Way of Protecting Inventions: The Inventive Loop' (2018) 53 les Nouvelles - Journal of the Licensing Executives Society No. 3 165, available at SSRN: <https://ssrn.com/abstract=3218574> accessed 11 November 2022.

of Intellectual Property Rights) Agreement.[6] A compulsory license is often associated, but not limited to, public health reasons or the lack of fundamental goods required by the market. The exception is well understood and has seldom created friction. Its aim is to strike a balance between promoting access to fundamental products, for example in the pharmaceutical industry, and promoting new research and development.

A similar approach is taken for a standard essential patent (SEP), a particular kind of patent which discloses and claims an invention that is technically required to practice a given industry standard, as defined by a standard setting organization. By contributing their technology to the standard, companies agree to forgo the right to use their SEPs solely for proprietary purposes and agree to license them on FRAND terms. The FRAND (fair reasonable and non-discriminatory) commitment aims to ensure that interoperable solutions are implemented, benefiting both SEP owners and licensees. It prevents patent owners from blocking the market (hold up behaviour)[7] and guarantees that SEPs are licensed under fair and reasonable terms. In this way, implementers can enter new markets and patent owners can be rewarded with a reasonable economic return for their R&D investments, providing funds for further innovation.

However, over the years the FRAND commitment has also created various issues, such as the perceived problem of over-declaration of patents before standardization bodies, concerns regarding essentiality and, above all, the issue of how to determine a FRAND royalty rate. Furthermore, the FRAND commitment is a unidirectional obligation more for the benefit of implementers than for the benefit of innovators. In fact, implementers are not currently bound to any commitment symmetrical to the FRAND obligations, and they often adopt hold-out strategies which have a negative impact on royalty revenues, distort the level playing field and potentially hinder further innovation.

To overcome uncertainties generated by the FRAND commitment, Moving Picture Audio and Data Coding by Artificial Intelligence (MPAI), a recent standardization entity, has adopted for instance a new intellectual property management model called "FrameWork License" (FWL), which already establishes at the outset of the

[6] The term "compulsory licensing" does not directly appear in the TRIPS Agreement; instead Art. 31 refers to "other use without authorization of the right holder". This refers to compulsory licensing and other use authorized by governments for their own purposes. Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, 1869 U.N.T.S. 299, 33 I.L.M. 1197 (1994). Art. 31 (on other use of patents without authorization of the right holder) is available at <https://www.wto.org/english/docs_e/legal_e/27-trips_04c_e.htm> accessed 11 November 2022.

[7] "Patent hold up" refers to opportunistic licensing of a SEP when the SEP owner seeks unreasonable royalties because the patent is essential to the standard. To deter patent hold up, SSOs generally require participants to disclose their relevant patent rights to the SSO during the standard's development and license any SEPs on fair, reasonable, and non-discriminatory terms. The implementer is "held up" because it must take a licence from the SEP holder; the FRAND promise made by the SEP holder constrains its royalty demand. While there are several examples of patent hold out by implementers, except from the famous Rambus case, there is no further evidence of patent hold-up by patent owners.

standardization activities the guidelines on how future licenses relating to MPAI-essential patents SEPs should be applied. Thanks to these more precise guidelines, established during the standardization process, MPAI plans to help both the SEP holders and the implementers of the new standardised technologies to find an agreement for the use of such SEPs and avoid the friction that is very common in licensing discussions. In addition, MPAI also provides obligations for both patent owners and implementers. The following rules are defined in the MPAI statutes:[8]

- Commitment for implementers: "Only Licensees of the Essential Patents used in a product or service to which the Name and/or the Logo apply are entitled to use the MPAI Name and/or the MPAI Logo".
- Commitment for innovators: "Patent owners will grant a license for the SEPs at a cost of the licenses for similar data coding/decoding technologies and will take into account the value on the market of the specific standardised technology. It will also state that access to the standard will be granted in a non-discriminatory fashion".

MPAI thus sets for SEP holders a reference point for royalty rates while creating for implementers an incentive (use of MPAI branding) tied to completion of licensing negotiations.

2.1 Factors to consider when setting a FRAND royalty rate

Standards foster innovation; they open markets for new products and services; and they increase competition, which then benefits innovators, implementers and consumers.

A FRAND royalty is indeed the fair reward recognized to the patent holder for the R&D investment made to develop the patented technology made available within a standard. At the same time, FRAND pricing must also incorporate licensee-related interests and the aggregate royalty paid by the implementer must be reasonable and affordable for the market.

The question is: how do we transform these concepts into numbers or rates by determining a FRAND value for a SEP license?

The widespread adoption of standardised technologies over the past decades has resulted in different ways to determine a FRAND royalty. Various approaches have been developed,[9] including:

[8] For more information on MPAI statutes, please visit: <https://mpai.community/statutes/> accessed 11 November 2022. On its approach to licensing see now: Roberto Dini, 'FRAND forever? Or are there other business models possible?' (2021), available at <www.MPAI.community> accessed 11 November 2022.

[9] For a discussion of these approaches, see Matteo Sabattini, 'Defining Fairness: Promoting Standards Development By Balancing The Interests Of Patent Owners And Implementers' (2016) 51 LES Nouvelles No 2 46.

- ex-ante approach;
- top-down approach;
- comparable-licensing approach;
- value-added approach.

The "ex-ante approach", which is generally considered too vague and indefinite, is in large measure based on the concept that a reasonable FRAND royalty must be defined and implemented by reference to ex ante competition, i.e., before a single technical solution is selected to become part of a standard. The "ex ante" approach is designed to take account of the perceived risk that a disproportionate increase in the SEP's value could be due to its selection for the standard (and not to a notional "ex ante" value). This approach is not effective considering that when a technology is incorporated into a standard, the related patent has a high scientific and commercial value, and it is not a so-called "frivolous" patent of trivial value.

The "top-down approach" extrapolates the aggregate royalty rate of all SEPs reading on a particular standard and then identifies a SEP holder's exact portion of this aggregate rate. It presents, however, severe informational challenges like the problem of over-declarations that makes it impossible to know how many actual essential patents cover a certain technology. As a result it relies on basic patent counting, thus failing to consider the value of the patents for example as contributing to the success of the standard (and to the success of the implementing devices).

An alternative approach to FRAND rate determination is the so-called "comparable-licensing approach", which is based on the royalty calculation on licensing agreements signed by similarly situated parties. This approach provides reliable evidence on how markets assess the value of SEPS; however, due to confidentiality provisions present in licensing agreements, it may be hard to have access to comparable source.

Finally, the "value-added approach", which is the most widely used approach, considers the value added to the licensed product by the patented technology in terms of new or improved functionalities: the higher the value generated, the higher the royalty rate.

Unfortunately, not all implementers are ready to fully recognise the value added by SEPs. This is demonstrated by theories such as the "smallest saleable patent practicing unit" or "license to all" approach, which propose to base the royalty calculation and licensing attachment point respectively on the component without taking in account the added value the technology provides to the end product.[10] These approaches do not

[10] This approach was adopted in 2015 by the IEEE in its IPR policy but now appears to have been abandoned. See the update provided by IEEE to the bylaws relating to patents, IEEE SA Standards Board Bylaws, art 6, available at <https://standards.ieee.org/wp-content/uploads/import/governance/bog/resolutions/september2022-updates-

adequately reward the patent owners for the value of their investments, nor do they incentivise further development expenditures for innovation; this would be detrimental to the objective of intellectual property rights of incentivising innovators and business to provide the market always with more performing products for the benefit of consumers.

A mobile phone that some time ago, at most, was able only to make voice calls and send text messages, the so-called short message services (SMS), cannot be compared to the smartphones we use today, which, due to the growing number of embedded features, include considerably more features protected by means of IPRs. These modern devices are worth more than older and less functional devices, and implementers as well as users must recognise the enhanced value of the IP that makes those features possible. Is it fair to diminish this amount to a percentage of the smallest saleable unit? Clearly, the value is provided not only by the chipset, but by the entire phone and embedded innovations connected to and operative on the mobile network.

What is true with mobile phones is also true with cellular technology deployed in the automotive industry. However, rather than determining what is FRAND based upon the value that a cellular connection brings to a connected car, some implementers campaign for "component-level licensing", which proposes that the royalty calculation should be based on the component price with disregards of the use or value that the technology brings to the end product. Framed as a supply chain issue, this is a strategy to provide automakers with access to cellular connectivity at a cost that does not consider the real and actual financial value the technology brings to the final product, which in this case is a full connected car.

The difficulties with this argument become apparent if we compare the relatively low cost of a license to the IPR to the willingness of customers to pay a premium price for cellular connectivity in a car. In the automotive industry, all the SEPs owned or controlled by all the companies related to 4G connectivity (which includes also 2G/3G) are available at a one-time cost, which is between $15 to $20 USD (that is, less than a parking ticket in many cities). At the same time, the value added by these SEPs to the car's functionalities, concerning broadband connectivity, road safety, etc., is orders of magnitude higher than this price. Today, few consumers would buy a premium or even mid-value automobile without cellular features; yet car manufacturers are intensely litigating and lobbying to further reduce the royalty paid on these technologies.[11]

sasb-bylaws.pdf> (setting out in highlight changes to the policy) accompanying IEEE, IEEE Announces Decision on Its Standards-related Patent Policy (30 Sept 2022) available at <https://standards.ieee.org/news/archive-2022/ieee-announces-decision-on-its-standards-related-patent-policy/> accessed 11 November 2022.

[11] Automakers no longer appear to be reluctant to accept the terms offered by Avanci, the patent pool administrator offering licenses for 4G and other cellular technologies to the automotive market. Avanci, Avanci Expands 4G Coverage to Over 80 Auto Brands (press release 21 Sept 2022) available at

Beyond a fair reward to the innovators, licensing the car manufacturer rather than the component manufacturer simplifies and reduces the costs of the licensing process, avoiding a fragmented approach to several component makers. This solution will also benefit licensees, as the car is charged only once, even if the standardised connectivity technology is key for the functioning of multiple components serving different uses.

Another critical issue to consider in determining a fair royalty rate is the fact that the cost of the same device in Western countries is higher than in developing countries or in mass markets like China. Normally, a product sold in China costs one third less than the same product sold in Western countries. This issue can be overcome if the royalty rate is defined as a percentage of the value of the product sold on the different markets, and not at a fixed rate. This strategy would indeed nullify forum shopping, neutralizing the attempts to have a national court located in countries where the pricing of products is much cheaper defining a global royalty rate (see below on "Unwired Planet v. Huawei and the ASI Phenomenon"). Not based on geo-political influences, this method only focuses on determining what is the percentage value that correctly rewards the patent owner and at the same time does not discourage implementers from introducing products protected by SEPs on the market.

3 Injunction and Litigation

Injunctions are a fundamental tool to protect intellectual property rights and a matter of justice to prevent unauthorized use of technologies. Without injunctions, patent owners would be left powerless against the unauthorized use of their innovations, especially with regard to the so called "willful infringers" or "unwilling licensees".

This is especially true when SEPs are involved, for in the absence of injunctive relief, there are no other remedies left to patent owners when negotiations completely fail or are purposely stalled by potential licensees that refuse to take a license.

Without a strong patent system based on injunctive relief and fair court treatment with respect to awards and fees, innovators, and in particular smaller entities, would be left with little recourse against larger corporations, with greater resources to engage in never ending legal disputes. Injunctions are in fact a competition tool that help to re-establish the much-needed balance especially in the consumer electronics field where large corporations can easily allocate hundreds of millions of dollars of their annual budget to litigate against patent owners that do not have the same financial strength.

<https://www.avanci.com/2022/09/21/avanci-expands-4g-coverage-to-over-80-auto-brands/> (Avanci licensing to "the majority of the connected vehicle market") accessed 11 November 2022.

The well-known decision in the Huawei vs ZTE case issued by the Court of Justice of the EU (CJEU) in 2015 (Case ID: C-170/13) recognizes the existence of hold-out behaviour, providing clear guidance on the remedies available against "Standards Free-Riders". It also confirms the importance of maintaining all remedies against unwilling licensees in the context of SEP licensing. In particular, the CJEU ruled that enforcement and injunctions are a matter of justice, and injunctive relief may be available if an alleged infringer fails to respond diligently and in good faith to a detailed written offer from a SEP holder.[12]

The CJEU confirmed that FRAND is a "two-way street": licensors accept to license on FRAND terms – thus allowing SSOs to include technologies developed by the broadest possible base of stakeholders – but in return implementers accept to take a license on those FRAND terms. The burden cannot be only on patent owners, especially because implementers are not forced to implement a standard. They only do so if they see value in a potential new market based on standardised technologies, and that value needs to also account for fair rewards to the innovation ecosystem that developed the standard.

3.1 Sisvel v. Haier and the concept of "willing licensees"

In recent years, several national court rulings have been based on the framework established by European Court in Huawei vs ZTE. A step further has been made by the German Federal Supreme Court (Bundesgerichtshof - BGH) in the Sisvel vs. Haier case.[13] The court mandated that SEP implementers must proactively seek to obtain a FRAND license by showing a concrete level of engagement in negotiations to be considered a "willing licensee". Following the CJEU decision, the BGH ruling sets significantly stricter requirements for implementers and makes it clear that FRAND negotiations and licensing are not a one-way street where technology adopters just exploit the benefits of implementing technologies developed by others without any of the burdens associated with such use.

The BGH provided important guidelines on technology licensing negotiations of standard essential patents. In particular, the BGH has:

- recognized the existence of hold-out tactics which are widely adopted by implementers;

[12] Robert Dini, 'The EU Court of Justice sets out specific requirements with which an SEP holder needs to comply in order to be able to seek an injunction without abusing its dominant position (Huawei / ZTE)' (2018) Concurrences e-Competitions Art No 85452.

[13] On May 5, 2020, the German Federal Supreme Court delivered its ruling on the case between Sisvel, a company that manages patent pools of SEPs relating to ICT technologies, and Haier, a Chinese manufacturer of consumer electronics products. The BGH decision confirmed that Haier's devices infringed the patent in suit and it also provided important guidelines on technology licensing negotiations of standard essential patents. Federal Court of Justice, judgment dated 5 May 2020, SISVEL Vs Haier, Case No. KZR 36/17.

- stated that a concrete level of engagement is required in negotiations for an implementer to be considered "willing" to take a license;
- confirmed that injunctions against unwilling licensees are fully available to SEP owners;
- recognized that FRAND commitment does not imply that each implementer must receive the same offer and licensing agreements may vary due to specific market circumstances;
- confirmed that patent portfolio licenses and worldwide coverage have positive effects;
- highlighted that damages for infringement should not be limited to FRAND rates.

In recent years, the concept of "willing licensee" has played a central role in SEP disputes. These present the questions of when an implementer is using "hold-out" strategies and what level of engagement in the negotiations is required for an implementer to be considered "willing".

By recognizing the existence of hold-out strategies which are widely adopted by implementers to delay the negotiation process (such as insisting on obtaining an unreasonable amount of information or repeatedly saying that the license offer is not FRAND but neither providing constructive arguments nor a counteroffer), the BGH has set a higher threshold than in the past. In fact, the BGH underlined that an implementer must be actively engaged in the licensing negotiation process with a clear and unconditional intention of concluding a license. A certain level of active engagement is required. Just claiming to be willing to take a license is not sufficient. As stated by Mr. Justice Birss in Unwired Planet vs. Huawei a willing licensee must be one willing to accept a FRAND license on whatever terms that are in fact FRAND.

The BGH also pointed out in Sisvel v Haier that the implementer has the right to challenge the alleged infringement on the validity of the patent, but implementers should not insist on first obtaining a positive court judgement as a condition for concluding a license.[14]

Following the decision of the CJEU in the Huawei vs ZTE case, the BGH confirmed that the SEP owner must notify the implementer of the alleged infringement and the necessity to take a license. However, it criticized the practice often adopted by implementers of asking for additional technical information as a delaying tactic, in particular, in the context of SEPs, as both patents and standards are publicly available documents.

[14] A similar concept is contained in a recent CJEU decision (Case 44/21 *Phoenix Contact vs. Ha*rting [2022] available at <https://curia.europa.eu/juris/document/document.jsf?docid=258493&mode=lst&pageIndex=1&dir=&occ=first&part=1&text=&doclang=EN&cid=73811> accessed 11 november 2022-) stating that interim relief for patent infringement is not precluded even when the validity of the patent concerned has not been confirmed by a decision given at first instance in opposition or invalidity proceedings.

The BGH recognized that portfolio licensing offers have positive effects and should not raise any antitrust concerns, provided that the implementer is not required to pay for the use of non-essential patents. The BGH also highlighted that it was common industry practice and more efficient to have a global portfolio license. The patent owner is not required to license a subset of SEPs; rather, the offer of the whole portfolio should be considered in the best interest of implementers to allow easy and efficient access to a larger SEP portfolio as a single solution.

Another important resolution set by the BGH is that the FRAND commitment does not mean that everyone receives the same standard offer. The aim of the FRAND commitment requested by standard setting organizations is to guarantee that all implementers can access a given standardised technology, provided that they agree to pay for a license on FRAND terms. However, the Court recognized that patent licensing sits firmly in market and business realities, and non-discrimination should not be considered hard-edged. Patent owners are thus not obliged to offer the same standard rate to all implementers. A license, which a patent owner has concluded in certain circumstances, does not necessarily become a reference for future cases. In fact, a patent owner may accept conditions which may be less favourable than normal, but which are still the best that can be obtained in those specific conditions. This does not necessarily entitle subsequent licensees to the same royalty rate. For example, Sisvel offered Haier a higher royalty fee compared to the one it previously offered to another licensee,[15] a state-owned Chinese telephone manufacturer.

The BGH also confirmed that injunctions against unwilling licensees are fully available to patent owners. An injunction is the only remedy to stop unauthorized use of SEPs and can be considered as an abuse of dominance only if the implementer is ready to conclude a license under FRAND terms.

Finally, the BGH declared that SEP owners are entitled to claim full damages for the period before the implementer started pro-actively seeking a license for the patent that it necessarily infringed when, for example, it began manufacturing products compliant with the standard. Full damages should not be limited to a FRAND rate, but can be based, for example, on lost profits of the SEP owner or on the implementer's profits.

With its recent decision in Sisvel v Haier, the German Federal Court of Justice has acknowledged the existence of hold-out strategies and clarified that implementers must also play a more active role in obtaining a license, accepting a FRAND offer, even if a lower royalty rate has been offered to a competitor in different circumstances. Moreover, the decision of the BGH offers some important guidelines on SEP technology licensing, providing more legal certainty in the FRAND negotiation process. This results

[15] On Sisvel v Haier, see also Matteo Baroni, Sisvel vs. Haier – Some important guidelines on technology licensing of Standard Essential Patents (SEPs), available at <https://metroconsult.it/en/2020/08/31/sisvel-vs-haier-some-important-guidelines-on-technology-licensing-of-standard-essential-patents-seps/> acceded 11 November 2022.

in a win-win solution for both patent owners and implementers to create a level playing field in the licensing ecosystem.

3.2 Unwired Planet vs. Huawei and the ASI Phenomenon

Another landmark ruling is the UK Supreme Court decision in the Unwired Planet vs. Huawei case. The key point in this judgement is that a national judge determined the value of a FRAND royalty for a global SEP license. Initially, this ruling seemed a sensible solution for setting a global FRAND pricing mechanism for SEPs, but the decision has been misconstrued in some foreign courts.

Following this judgement, other courts issued decisions stating that they are likewise entitled to determine the level of the royalty rate for a global license. As a result, technology implementers started racing to jurisdictions believed to attribute far less value to intellectual property rights.[16] This has raised considerable concerns on which court can define a FRAND royalty rate and more generally on sovereignty. An interesting example is the race to Chinese courts. As the country with the largest consumer market and where most of the factories of implementers are located, China felt entitled to claim jurisdiction over a global FRAND rate case, which was separate from any underlying claim of patent infringement.

Such reasoning, no matter how Chinese courts might try to justify it, is in contrast with the normal perception that national courts should refrain from forcing a patent owner into their courtroom and imposing a patent royalty rate outside their territory.

It is of course controversial that a national court simply takes on the jurisdiction, and the power to issue cross-border injunctions, against a party pursuing a case in another territory, regarding the determination of a global license, the so-called "anti-suit injunctions" (ASIs).

In addition, there is an important distinction between the UK decision in Unwired Planet vs. Huawei and later Chinese decisions that deployed ASIs to maintain the right in China to establish a global royalty rate and consequently interfere with foreign judicial decisions. In Unwired Planet, the UK court held that if the plaintiff was not willing to take a global license based on the court ruling, the court would issue an injunction for the UK territory, and the UK territory alone. There was no attempt to limit either party's rights or obligations in foreign jurisdictions. The UK court respected the sovereignty of other jurisdictions; its deference stood in contrast to the practices of

[16] It is interesting to note that in the Vestel Elektronik vs. Access Advance case, the Court of Appeal of England tried to stop this "forum shopping". In the case, there was essentially no patent infringement activity in England; the sole contact with England was limited to the direct application to the English court to fix the rate of royalty for a technology standard being implemented by Vestel. The Court of Appeal determined that the court lacked jurisdiction to do so, and explained that without action for patent infringement, there would be no jurisdiction to invoke a FRAND defence. Thus, there was no jurisdiction to set a global FRAND rate.

Chinese courts that take on the cases as "contract disputes" and deploy ASIs which have the effect of interfering with foreign judgements or involving companies over which they do not have jurisdiction.

ASIs are emerging as a tool used by national courts to defend the interests of their national industries and perhaps could also be seen as a state aid or even an unfair trade practice, which isn't permitted by international trade treaties such as the WTO agreements and other multilateral agreements.

The widespread use of anti-suit injunctions in SEP disputes is quite recent. It is therefore important to understand the rationale adopted by Chinese courts when issuing ASIs.

The most well-known cases in China involving anti-suit injunctions are:

- Huawei vs. Conversant (Supreme People's Court - IP Court, September 2020);[17]
- Xiaomi vs. InterDigital (Wuhan Court, September 2020);[18]
- Samsung vs. Ericsson (Wuhan Court, December 2020).[19]

[17] The Supreme People's Court of the People's Republic of China, Civil Ruling, of 28 August 2020 in Cases No. 732, No. 733 and No. 734, between Huawei Technology Co. LTD and Conversant Wireless Licensing S. à r.l. Huawei filed a lawsuit before the Nanjing Intermediary People's Court on SEP infringement and FRAND royalty determination. The Nanjing court made the first-instance judgment and Conversant appealed to the Supreme People's Court (SPC). A parallel SEP litigation was filed in Germany and the Dusseldorf court made the first-instance judgment, finding Huawei infringed Conversant's patent rights and that Conversant's licensing offer is consistent with its FRAND commitment.
The FRAND rate established by the Dusseldorf court is 18.3 times higher than the one determined by the Chinese court in Nanjing. For this reason, the Chinese court decided to issue an ASI to enjoin Conversant from enforcing the Dusseldorf judgment before the SPC made its final decision.
The Chinese judges stated that Conversant's act of enforcing the Dusseldorf judgment would hinder the judicial review pending in the Chinese courts. According to the judges it was thus reasonable and urgent to issue an injunction against Conversant; otherwise, Huawei would have suffered irrecoverable damages and the decisions of the Chinese courts would have been ineffective. The court further determined that the damages Huawei would have suffered if the injunction in Germany had been adopted significantly exceeded the damages that Conversant would have sufferered if the SPC had issued the anti-suit injunction.
[18] Wuhan Intermediate People's Court of Hubei Province, case (2020) E 01 Zhi Min Chu No.169. Xiaomi filed a lawsuit before the Wuhan Court to determine a global FRAND rate, and subsequently InterDigital applied for an injunction before the Indian court to prevent Xiaomi from implementing the Indian SEPs in the Indian market.
According to the Wuhan Court, InterDigital deliberately initiated the application for an injunction in the Indian proceedings to exclude the Chinese court's jurisdiction and offset the impact from the Wuhan case. The court considered that if InterDigital's application for an injunction was not stopped in time, the Indian court was likely to make a conflicting judgement with the Wuhan Court, which would severely harm Xiaomi's interests in the Indian market, creating irreparable damages. In contrast, the court determined that the issuance of an ASI would not cause any substantial damages to InterDigital and would not harm the public interest.
The Wuhan Court issued an ASI, which not only requested InterDigital to withdraw or suspend the injunction application before the Indian court, but also enjoined InterDigital from initiating any other proceedings in other national courts by applying for injunctive relief or FRAND rate determination.
[19] Wuhan Intermediate People's Court of Hubei Province case (2020) E 01 Zhi Min Chu No. 743. Samsung filed a lawsuit in Wuhan Court to determine a global FRAND rate while Ericsson applied to the US district court for declaring Ericsson's offer FRAND and compliant with its FRAND commitment and ETSI IPR policy. Samsung applied thus for an ASI before the Wuhan Court.
This case applied the same logic as in Xiaomi (footnote 19). However, it is interesting because the Wuhan Court issued both an ASI, which prohibits Ericsson from applying and enforcing any injunction against Samsung and enjoins it

The elements assessed by the Chinese courts in these three cases, which in each case led to the ASI decision, can basically be summarized as follows:

- the possible impact of the enforcement of foreign court decisions on parallel litigations in China;
- the necessity to issue an ASI;
- an assessment as to whether the damage sustained by the applicant if an ASI is not issued exceeds the damage sustained by the respondent if an ASI is issued (balance the interests);
- a further assessment on whether issuing ASIs causes damages to public interests;
- the compliance of ASIs with the doctrine of comity.

It is regrettable that the courts in China seem to have an incomplete analysis of the concept of public interest. "Social public interest" should be considered not only with respect to the cost of products, but also the interest in always having new standards and improvements in the products. Not providing sufficient rewards to innovators, who have brought their patented technologies into the standards, obviously does not facilitate the goal of fostering innovation and having new and safer products available. This is the real public interest, which is also stated as the purpose of Patent Law in China.

National courts should issue decisions directed at their own territories, and not involving foreign companies or interfering in foreign litigation. Restraining a party from applying a foreign judgment in a foreign territory raises serious doubts as to its compatibility with comity and other principles of international law, as it purports to bind the courts in other countries. Giving due regard to territorial sovereignty is a fundamental principle of any legal system.

Disruptive actions like ASIs certainly disturb the innovation ecosystem with respect not only to the patent holders, who made significant investments in R&D and expect a reward for their new patented technologies, but also to the implementers, who have an economic interest in entering new product markets and need to legally use innovations.[20]

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from requesting other courts to set a FRAND license rate, and further issued an anti-anti-anti suit injunction (AAASI), which prohibits Ericsson from filing an AASI in other courts to revoke the Wuhan ASI application. However, Ericsson ignored the harsh sanction threats from Wuhan and immediately filed an AASI at the District Court of Texas, which issued a temporary restraining order and anti-interference injunction against Samsung.

[20] The question of anti-suit injunctions, including the geopolitical aspects, has been the subject of academic inquiry and considered views by practitioners. See for example Roberto Dini, Jing He & Mario Franzosi, Anti-suit injunctions are a race to the bottom – and arbitration is the answer (2022), IAM (2022); Jorge Contreras, 'Anti-Suit Injunctions and Jurisdictional Competition in Global FRAND Litigation: The Case for Judicial Restraint', (2022) 11 NYU Journal of Intellectual Property & Entertainment Law 171; and Mark Cohen, China's Practice of Anti-Suit Injunctions in SEP Litigation: Transplant or False Friend? (May 31, 2022) in Jonathan Barnett (ed), 5G and Beyond: Intellectual Property and Competition Policy in the Internet of Things, available at SSRN: <https://ssrn.com/abstract=4124618> accessed 11 November 2022.

3.3 Applying for an ASI indicates unwillingness to take a FRAND license

As stated by the Sisvel vs. Haier decision, a prospective licensee must proactively act to reach an agreement with the patent holder within a reasonable period of time. Failure to do so could be considered an unwilling attitude and therefore the prospective licensee may face an injunction.

Considering this latest European jurisprudence, if a prospective licensee seeks an ASI rather than try to reach an agreement with the patent holder, the prospective licensee does not qualify as a willing licensee. In the dispute between InterDigital vs. Xiaomi, the Munich Regional Court considered the request for an ASI an interference with the property rights of the patentee and therefore a foreign ASI could not be accepted as a decision entitled to domestic application. Applying for an ASI indicates unwillingness to take a FRAND license. The court found that patent users willing to take a license would refrain from further unlawful interference with the patentee's legal positions. Therefore, a patent user, who applies for an ASI or threatens to do so, cannot be regarded as sufficiently willing to take a license within the meaning of the case law of the Court of Justice of the European Union and the German Federal Supreme Court.

To put an end to the spiral of ASIs, AASIs (Anti Anti Suit Injunctions), AAASIs (Anti Anti Anti Suit Injunctions), etc., the Munich Regional Court went a step further, holding the implementer punishable for this attempt to avoid the obligation to pay the royalties. The Court was very explicit: the implementer can indeed try to obtain an ASI, but the patent owner can also go back to the Munich Court, which will grant an injunction. This reasoning demonstrates that ASIs are not a proactive way to negotiate a FRAND royalty and so the court tries to re-balance the situation between the patent owners' FRAND declaration and no commitment from the implementers.

3.4 Phoenix Contact vs. Harting and the precautionary measures

Another interesting decision is the European Court of Justice recent ruling in the Phoenix Contact vs. Harting case (case ID: C-44/21).[21] Responding to a referral from the Munich Regional Court, the CJEU affirmed that preliminary injunctions are available to patent owners even if the patent in suit has not yet survived an opposition or nullity action.

According to CJEU the granting of a patent, after a substantive examination, is sufficient to determine its validity. German courts, indeed, may grant a preliminary injunction in infringement cases even if the patent-in-suit is not yet proven valid in

[21] The judgment is based on a referral made by the Munich Regional Court on an opposition filed by Harting against Phoenix Contact's patent EP 536. In the pertinent case, the judges considered the patent in suit, which had just been granted by the European Patent Office, as valid and infringed, but did not see themselves in the position to issue the requested injunction and instead referred the question to the European Court.

opposition or nullity proceedings. With this decision the CJEU declared incompatible with art. 9 of the EU Directive 2004/48/EC (Enforcement Directive)[22] the German jurisprudence according to which the legal validity of a patent-in-suit is only sufficiently secured once it has survived first-instance opposition or revocation proceedings; it was thus incompatible with EU law by rejecting requests for precautionary measures for patent infringement on the basis that the validity of the patent has not yet been challenged.

The requirement for granting a preliminary injunction imposed by the German courts deprived patent owners of their right under this Directive to obtain injunctive relief, even though the patent in suit is valid and infringed. Additionally, a nullity suit could take years. During this period, the patent owner may have to tolerate a possible infringement. It would therefore make sense to merge the jurisdictions for infringement and validity, as envisaged by the Unified Patent Court (UPC), and as it is also common practice in other countries.

4 Patent pools for an industry-wide balance

In an effort to guarantee fairness to all stakeholders and restore a balanced approach to licensing, the ecosystem should focus on solving the issue of the so-called "unwilling licensees" at the source, providing certainty and predictability to the licensing offer.

A tool to enhance efficiency is aggregation of patents essential to a standard through patent pools or joint licensing programs; this form of patent aggregation could have a key role in simplifying licensing transactions.

With technology becoming more complex and sophisticated every day, implementers often rely on broad-based standards to ensure that their products will be interoperable in the global marketplace. In this environment, it is not uncommon for patents belonging to different owners to be present within a single standardised technology; at the same time, no one is keen on having to obtain multiple licenses from multiple sources covering the same technology. If every patent owner was to

[22] Enforcement Directive (Directive 2004/48), Article 9 - Provisional and precautionary measures.
'1. Member States shall ensure that the judicial authorities may, at the request of the applicant:
(a) issue against the alleged infringer an interlocutory injunction intended to prevent any imminent infringement of an intellectual property right, or to forbid, on a provisional basis and subject, where appropriate, to a recurring penalty payment where provided for by national law, the continuation of the alleged infringements of that right, or to make such continuation subject to the lodging of guarantees intended to ensure the compensation of the right holder; an interlocutory injunction may also be issued, under the same conditions, against an intermediary whose services are being used by a third party to infringe an intellectual property right; injunctions against intermediaries whose services are used by a third party to infringe a copyright or a related right are covered by Directive 2001/29/EC'.
Directive 2004/48/EC of 29 April 2004 on the enforcement of intellectual property rights [2004] OJ L 195/16 available at <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004L0048R(01):EN:HTML> accessed 11 November 2022.

individually ask for a royalty fee for his patents, the price would soon escalate. Additionally, the requirement to negotiate a separate license with each patent owner would be extremely time consuming and expensive.

This has resulted in a growing interest in the formation of patent pools. While in the past the word "pool" has had negative antitrust connotations and has been seen as an attempt to control the market, this is not the case for today's patent pools. A patent pool facilitates technology licensing by creating a "one stop shop" solution, which means that a single license agreement grants the right to use a portfolio of patents essential for implementing a certain standardised technology owned by multiple patent holders.

There is growing recognition that patent pools encourage free competition and economic-technological development. Firstly, they decrease the price compared with the cost that would be derived if multiple licenses had to be negotiated individually by each implementer. In addition, they reduce transaction and administrative costs, providing certainty and predictability to the market and ensure fair and non-discriminatory licensing of essential patents through an independent, professional patent pool administrator.

A successful patent pool must be attractive for both large and small licensors and offer all licensees a competitive licensing solution. To attract licensors, the pool should endorse a transparent and inclusive process to build consensus and encourage participation in the pool. In order to achieve wide acceptance among licensees, a patent pool should offer a value-based license, include administrative tools that enhance efficiency, and make the reporting and payment process straightforward. It should also take into consideration enforcement and compliance mechanisms to reassure licensees that all companies using the technology are licensed and paying the same royalties.

Finally, patent pools facilitate the determination of a fair and acceptable royalty rate, as in some cases licensors in the pool are also licensees of the patents administrated by the pool. As a result, the royalty level accepted by the members of the pool that are also implementers should as such be also accepted by the market, reducing friction among patent owners and implementers and promoting efficient licensing transactions.

Patent pooling is widely recognized as the "go-to" form of aggregation and was promoted by several tests of antitrust authorities. It should be noted that the European Commission, in its communication of 29 November 2017 to the European Parliament about setting out the EU approach to Standard Essential Patents, stated: "For instance, the creation of pools may be encouraged by means of measures such as strengthening the relationship between SDOs and pools, providing incentives to participation and

making universities and SMEs more aware of the advantages of becoming a licensor in a pool".[23]

A new form of aggregation – the licensing negotiation groups - is promoted by implementers as having similar benefits, but they remain untested, and they seem likely to raise ample antitrust concerns.

4.1 A possible role for SSOs (Standard Setting Organizations)

Pools or licensing programs should be established in the early stages of the standardization process and discussions regarding licensing frameworks should also ideally be introduced immediately after the completion of the process. One way in which governmental authorities and SSOs can provide their support is by fostering or encouraging the formation of patent pools.

The Digital Video Broadcasting Project (DVB) is an example of a SSO that fosters pool formation. Fostering is a process in which SEP holders are encouraged to consider creating a pool covering a specification. In essence, it speeds up pool formation. It is a pre-commercial process that takes place before patent pool facilitation.

In this respect, DVB has always been very active and supportive of early licensing discussions, with the twofold objective of ensuring technology adoption and balancing the needs of both innovators and implementers. In other words, at an early stage of the adoption of the standard, the fostering by a standardization body to encourage patentees to take initial steps towards pool formation means that the cost for IPR use can be as easily accounted for by the implementers as raw material expenses.[24]

4.2 The importance of patent pools in assuring licensing of strong patents at a fair price

Over the last decades, an increasing number of patents have been declared essential to a standard by patent owners without providing any evidence of essentiality and this has caused the problem of over-declaration.

To avoid accusations of patent ambush or patent misuse, patent holders may feel compelled to declare their patents or patent applications even if they are not certain regarding their essentiality or validity (or whether a standard under development will ultimately include their patented innovation). Many of them declare their SEPs even when the patent application is still in the prosecution process; if a patent's scope is then

[23] Setting Out the EU approach to Standard Essential Patents <https://ec.europa.eu/docsroom/documents/26583> accessed 11 November 2022.
[24] Eltzroth, Carter, 'Fostering by Standards Bodies of the Formation of Patent Pools' (December 5, 2018), available at SSRN: <https://ssrn.com/abstract=3296514> accessed 11 November 2022.

narrowed down, it may no longer be considered essential or if a patent application is rejected, obviously, it cannot be essential. Some less scrupulous patent owners may deliberately declare their patents to be essential so that they can present a stronger portfolio during licensing negotiations.

Fortunately, patent pools help to solve this situation. In fact, before including a SEP in a pool the following two conditions must be met:

- the patent must be granted by an institution that operates a substantive examination like the EPO (European Patent Office), the USPTO (United States Patent and Trademark Office) or comparable patent office. This concept has also been underlined in the recent CJEU decision in the Phoenix Contact vs. Harting case discussed above, which stated that injunctions should also be made available to patents even if never challenged or opposed, because the granting of such patents by a patent office that carries out a substantive examination should be per se proof of their validity;
- for each jurisdiction where a patent has been granted after a substantive examination, the patent owner must also provide the patent pool administrator with an opinion on the essentiality of the patent provided by an independent and accredited third-party patent expert (i.e., who has never worked for the patent owner).

Moreover, the independence of the administrator (including the administrator's controlling shareholders) is another important element to safeguard the efficiency of patent pools and avoid potential antitrust risks. Licensing administrators that are independent from the patent owners and licensees foster the pools in full compliance with the law. They have an interest in granting licenses and preventing patent owners from using the pool to disadvantage competitors in downstream markets. In addition, they establish mechanisms to prevent patent owners from exchanging information among themselves and from directly accessing licensees' sensitive business information.

All this demonstrates that inside a patent pool strong patents are licensed at a fair price and administered by an independent entity in conformity with competition law.

5 ADR to solve FRAND disputes and avoid delaying tactics

In today's market, technologies are complex and products increasingly feature-rich. As previously mentioned, mobile phones are no longer just used for making calls, but rather offer consumers a vast range of other functions, such as internet connectivity, geolocation, photography, etc. The same is also happening in the automotive industry where cars are no longer just means of transport, but also ways to interface with infrastructures and to communicate with users outside the car. This increase in

functionalities available to the end user, relying on standardised technologies and interoperability, leads to an increase in the number of essential patents which protect the rights of the innovators who make such features available on the market.

An unprecedented number of standards are under development and increasingly more technical contributions are made to those standards. Likewise, there is an increasing number of worldwide SEP infringement litigations that, rather than foster clarity and transparency in the negotiation process, creates more uncertainty.

Given the challenging situation, if negotiation fails, instead of expensive and lengthy multi-jurisdictional court litigations, the most effective and efficient way to ensure that global FRAND rates are determined fairly and free from industrial and geopolitical influences such as Anti-Suit Injunctions, is to use international arbitration and mediation bodies like the WIPO Mediation and Arbitration Center[25] or the International Arbitration Center in Tokyo (IACT).[26]

Arbitration and other forms of alternative dispute resolution (ADR) offer a valuable resolution mechanism for disputes, which involve a multitude of patents and span several jurisdictions. These alternative solutions provide high efficiency at a reasonably low-cost. ADR tools can cover entire SEP portfolios as the territoriality principle does not hinder arbitration tribunals from considering patent cases from various jurisdictions, which is more efficient than court proceedings. Furthermore, arbitration enables parties to choose arbitrators with the necessary expertise for SEP/FRAND disputes, not only from a legal perspective but also from a technical and economic point of view. Finally, the New York Convention offers a regime for the enforcement and recognition of arbitral awards and provides a promising resolution with respect to the stalemate of ASIs in court proceedings.

Arbitration reduces the costs of litigation and has the advantage of solving once and for all the problem of how to determine the value of SEP royalty rates. However, in reality, arbitration, as an alternative to court disputes, has yielded so far mixed results. Anecdotal evidence shows that Chinese parties have a general suspicion concerning arbitration outside China or have more confidence in their domestic courts.

Courts, SSOs and governmental institutions like the European Commission and the national competition authorities have a fundamental role to stop market distortion and support the standard-based innovation ecosystems by promoting for instance arbitration as the most suitable tool to establish a fair global royalty rate.

Moreover, standard setting organizations could for instance encourage arbitration among their members. As they are consensual bodies, they cannot impose a

[25] For additional information on the WIPO ADR services, see <https://www.wipo.int/amc/en/> accessed 11 November 2022.

[26] For additional information on the International Arbitration Center in Tokyo (IACT), see <https://www.iactokyo.com/> accessed 11 November 2022.

requirement to arbitrate.[27] However, they could ask for a declaration of willingness to arbitrate from their members. Some companies already offer the ADR tool, including mediation requests, to solve the issue of determining the FRAND royalty rate. For instance, Sisvel in principle offers arbitration and mediation to every prospective licensee.[28]

Competition authorities have also a significant role to play. To address hold-out and hold-up behaviours and the market distortions that they may cause, they should recognise that it is in the interest of well-functioning markets for both patentees and implementers to resolve their disputes through alternative dispute resolution mechanisms in case there is no agreement on the FRAND royalty rate.

Finally, to foster the use of international arbitration, national judges called to decide on SEP matters could use their procedures quite powerfully to push people into arbitration as a sign of good faith and willingness in FRAND disputes. If implementers were to refuse to arbitrate or use some other form of alternative dispute resolution, their attitude should be considered as clear proof of being an efficient infringer and, thus, an unwilling licensee.

To find convergence in this world of FRAND and make arbitration more acceptable than any national courts, it is very important that all the arbitrators come from different countries. One of the current troubles in perception is that national courts are just that, "national." Therefore, it is important to have a pool of international arbitrators in order to have a broader and more acceptable decision. The WIPO Arbitration and Mediation Center for instance offers a platform specifically tailored for FRAND disputes which

[27] Of course, a standards bodies could adopt, as a requirement of membership, a provision requiring that its members arbitrate licensing disputes. DVB has adopted such a measure. DVB Project, Memorandum of Understanding further amended and restated for the development of harmonized Digital Video Broadcasting (DVB) services based on European specifications (2014), available at DVB Memorandum of Understanding (3 January 2014). Article 14.7 provides for arbitration between DVB members in disputes over adherence to DVB's IPR policy, for example whether one member is respecting its FRAND commitment. Of course, this does not handle the case where one party is not an SSO member and so not compelled to arbitrate. Arbitration of SEP disputes is once again dans le vent. See for example Peter Picht and Gaspare Loderer, 'Arbitration in SEP/FRAND Disputes: Overview and Core Issues' (2019) 36 Journal of International Arbitration 575. For an earlier treatment (and discussion of DVB's arbitration provisions), see Carter Eltzroth, 'Arbitration of Intellectual Property Disputes' (January 2014) 19 Arbitration News: Newsletter of the International Bar Association Legal Practice Division 86, February 2014, available at SSRN <https://ssrn.com/abstract=2406458> accessed 11 November 2022.

[28] As part of its mediation services, WIPO offers the option that a single potential party can commence proceedings. Art 4(a) of the WIPO Mediation Rules provides, "In the absence of a Mediation Agreement, a party that wishes to propose submitting a dispute to mediation shall submit a Request for Mediation in writing to the Center. It shall at the same time send a copy of the Request for Mediation to the other party "WIPO, WIPO Mediation Rules (2022), Rule 4. Making such a Request, together with its sending to the other party, could be considered steps consistent with the framework for FRAND negotiations developed by German courts. WIPO reports that its services were invoked related to licensing negotiations between a patent pool administrator and implementers in the course of ongoing unsuccessful patent licensing negotiations. The cases involved parties from 23 jurisdictions. WIPO notes, "Mediation requests prompted renewed licensing negotiations" which concluded successfully. Ignacio de Castro, 'Strategic Use of ADR to Resolve FRAND / SEP Disputes' (21 Oct 2022), Presentation at Global FRAND & SEP Symposium (Mountain View).

gives parties leeway to shape the procedure and even avails a database of more than 2000 neutral experts for parties to choose from.

6 Conclusion: How to Support the Standards-based Innovation Ecosystem

In the 5G and IoT era, standardization is fundamental to allow interoperability, but often results in a complex licensing landscape. There is indeed a strong need to reduce this complexity and motivate innovators to continue developing new technologies and standards to the benefit of technological progress and social welfare.

The governmental authorities, standard setting organizations and courts have a fundamental role to support the standards-based innovation ecosystems, avoiding market distortions and ensuring a balance between the interests of the users of standards and the rights of IP owners.

First of all, they have to address the imbalance that implementers are not currently making any commitment symmetrical to the FRAND obligation. As stated, the FRAND declaration is a commitment by the patent owners to provide access to their patented technologies under fair, reasonable, and non-discriminatory terms. However, so far, it is not sufficiently clarified which are the duties of the prospective licensee and this lack of clarity leads to hold-out behaviours and market distortion by implementers.

Luckily, the last generation of SSOs and several recent court decisions have tried to solve this issue. For instance, the Sisvel vs. Haier decision in Germany ruled that after receiving a notice of infringement of a SEP and a FRAND offer the implementer must act proactively to reach an agreement with the patent holder in a reasonable time. Otherwise, this behaviour may be recognized as "unwilling" and subject to a possible injunction or damages without a FRAND limitation.

Competition authorities should also look at the problem of "non payers", because it is unfair and anti-competitive when some implementers pay, and others, either singly or through concerted practices such as the "component level licensing" approach, act as free-riders.

Finally, the fact that some countries have used their regulatory authorities and courts to regulate pricing in favour of national companies and national interests must be recognized and addressed: They tilt the playing field and create their own rules. For example, over the years, the Chinese government has subsidized its industries. Chinese implementers could thus offer lower prices, afford long and expensive litigations that accompany hold-out behaviour and, through anti-suit injunctions, even seek to overturn and prevent unfavourable foreign court decisions, even if they are considered to be legally correct.

Failing to recognise and solve these issues may discourage innovators from investing in new research. Alternatively, they may decide to avoid participation in the standardization process and revert to proprietary, closed solutions, or trade secrets and this will certainly have a negative impact on technical progress and society well-being.

Allegra Ovazza – Federico Riganti*

SHIFTING FROM SANCTIONS TO PREVENTIVE REGULATION IN DIGITAL FRAMEWORK: A CRITICAL PERSPECTIVE

Abstract

The historical period we are living through is characterised by the vivacity and opposing thrusts: on the one hand, in fact, it emerges clearly that the intention of the European Union regulation is inter alia to modernise the traditional system, making it more sustainable, resilient, and efficient.

On the other hand, it is evident that the current war events bring attention to more concrete and current needs.

In this complex framework, it is useful to proceed step by step and to pay attention to the different segments that are thus characterising the path of European legislation.

Among others, it is interesting to focus on the theme of digital platforms, highlighting positive elements and possible criticalities.

Digital platforms and the digitalisation of commerce, and thus, more generally, of our habits, are, in fact, profiles characterised by a multiplicity of issues that need an accurate examination.

In addition to the existing relationship between technology and sustainability (still to be explored), we consider it useful to focus here on the issues of controls and responsibilities, to verify their efficiency and system compatibility.

It is increasingly necessary to understand whether the usual "sanctioning" and ex-post "control" tools are adequate or far from a regulation that, instead, proves to be more efficient if proactive and intended not to allow unsuitable players to enter the market.

The question addressed in this paper is whether the new rules set out in the Digital Markets Act could be the most adequate and efficient way to ensure access to the digital market by other (smaller) players.

To answer this question, we will first give a brief overview of the current legal framework based on ex-post remedies. Then, we will analyse the main innovative provisions as well as the main criticisms.

JEL CLASSIFICATION: K22

SUMMARY

* Allegra Ovazza, Fellow in Economic Law at University of Turin; Federico Riganti, Assistant Professor of Economic Law and Financial Markets Regulation at the University of Turin. Though the considerations expressed in the paper are shared by both authors, sections 1, 3, 4, and 5 should be attributed to Allegra Ovazza, while section 2 should be attributed to Federico Riganti.

1 The legal framework

Digital platforms, as is well known, are increasingly shaping economic, political, social, and cultural life. Over the past decades, tech giants increased their power in an uncontrolled way and legislators around the world are currently struggling to adequately respond to the new risks that accompany them[1]. It seems that traditional antitrust law, based on *ex-post* remedies, is no longer able to address market failure and gatekeepers' behaviour.

Even though lately national authorities have been very proactive in the enforcement of antitrust law, pursuing to limit the digital platform growing powers, nonetheless such authorities did not manage to improve competitive conditions in platform-controlled settings.[2] That inefficiency is mostly due to the length of the antitrust process and to the difficulties of the courts to deeply understand the complexity of digital economy.[3] The competition rules are currently provided in national regulations and, within the EU framework, in articles 101 and 102 of the Treaty on the functioning of the European Union (corresponding to Articles 81-89, in the previous version of the Treaty), which concern national regulations on business activities. In particular, the above-mentioned provisions prohibit anti-competitive agreements and concerted practices, as well as abuses of dominant positions.

[1] Jacques Crémer, Yves-Alexandre de Montjoye, Heike Schweitzer, 'Competition Policy for the Digital Era', Publications Office of the European Union, [2019]; J. Furman, D. Coyle, A. Fletcher, D. McAuley, and P. Marsden 'Unlocking Digital Competition, Report of the Digital Competition Expert Panel' [2019].

[2] Among others, it is worth noting that the Italian Antitrust Autority ("*Autorità Garante per la Concorrenza e per il Mercato*" or "*AGCM*") issued over the past few months very significant sanctions against big tech companies such as Amazon and Google, for instance: (i) in *Google Ireland ltd vs U.di.Con* [2021], Italian Antitrust Authority "Autorità Garante per la Concorrenza e per il Mercato", PS11147, and in *Apple Distribution International ldt. vs U.di.*Con [2021], Italian Antitrust Authority "Autorità Garante per la Concorrenza e per il Mercato", PS11150, AGCM accused both Google and Apple to deploy aggressive commercial practices, provided that such companies omitted relevant information and pre-selected user acceptance to the transfer and use of data for specific purposes. Moreover, in 2021 AGCM fined Amazon Europe Core S.r.l., Amazon Services Europe S.à r.l., Amazon EU S.à r.l., Amazon Italia Services S.r.l. and Amazon Italia Logistica S.r.l. with the huge sanction of about Euro 1 billion. Specifically, the Authority accused Amazon to hold a position of absolute dominance in Italy within the intermediation services on marketplace which leveraged the company to favour its own logistic services – Fulfilment by Amazon (FBA), harming competitors and strengthening its own position. Indeed, AGCM considered that Amazon tied to the use of FBA the access to a set of exclusive benefits essential for gaining visibility and increasing sales. One of the most relevant benefits is the Prime label, which makes it easier and quicker to sell products to the consumers who are-members of Amazon Prime programme; Amazon prevented sellers from associating the Prime label with offers not managed with FBA logistic service. In so doing, Amazon harmed competing e-commerce logistics operators by "preventing them from presenting themselves to online sellers as providers of services of comparable quality to Amazon's FBA and thus capable of ensuring high visibility on Amazon.it" [A528-FBA Amazon].

[3] See, for example, Luís Cabral et al, 'The EU Digital Markets Act: A Report from a Panel of Economic Experts', [2021], 6, 10 and 28; Rupprecht Podszun, Philipp Bongartz, Sarah Langenstein, 'The Digital Markets Act: Moving from Competition Law to Regulation for Gatekeepers' (2021) 10 EuCML, 60; Damien Geradin, 'What Is a Digital Gatekeeper? Which Platforms Should Be Captured by the EC Proposal for a Digital Markets Act?' (2021), <https://ssrn.com/abstract=3788152> accessed 19 May 2021; Giorgio Monti, 'The Digital Markets Act – Institutional Design and Suggestions for Improvement' (2021), TILEC Discussion Paper No. 2021-04, <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3797730>, accessed 20 May 2021.

The current competition legal framework provides "ex-post" remedies, that apply after the restrictive or abusive practice takes place; and it involves investigative procedures that are very costly and time-consuming.

In response to such difficulties, the EU Commission recently proposed two legislative initiatives, the Digital Services Act and the Digital Markets Act[4] (together also referred to as "Digital Services Package"). Such proposals may lead to a real transformation within the competition law framework.

The goal of the Digital Services Act[5] is to regulate online "intermediary services" (such as social media and marketplaces) that connect consumers to goods, services, or contents, by setting, among other things, standards on transparency, proposing limits on content removal, and allowing users to challenge censorship decisions (such issues are currently regulated by laws that came into force back in 2000).[6]

Whilst the Digital Services Act may have serious consequences regarding the freedom of speech, this paper intends to primarily focus on the Digital Markets Act (hereinafter also "DMA"), which has been approved by the EU Parliament Committee on the Internal Market and Consumer Protection and that is therefore making progress towards finalisation.[7]

2 The Digital Markets Act: between gatekeepers and consumers

The Digital Markets Act's goal is to make the digital sector fairer. The impact assessment document of the proposal,[8] in addition to this general objective of the regulation, highlights three specific objectives, namely: (i) "Address market failures to ensure contestable and competitive digital markets for increased innovation and consumer choice"; (ii) "Address gatekeepers' unfair conduct"; and (iii) "Enhance coherence and legal certainty to preserve the internal market".[9]

To pursue the above-mentioned goals, the DMA is intended to complement the EU and Member State competition rules, which facilitates the harmonisation of rules at the

[4] At the date of writing this text is not yet in effect.
[5] European Commission, Proposal for a Regulation of the European Parliament and of the Council on a Single Market for digital services (Digital Services Act) and amending Directive 2000/31/EC [2020].
[6] Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ("Directive on electronic commerce") [2020].
[7] The Digital Markets Act was proposed in the first place by the European Commission in December 2020 with the scope to radically change how digital platform act in the EU. Numerous amendments have been applied to the proposal and the final version has been recently - and finally - approved by the Committee on the Internal Market and Consumer Protection (IMCO) within the European Parliament.
[8] See: European Commission, "Impact assessments" <https://ec.europa.eu/info/law/law-making-process/planning-and-proposing-law/impact-assessments_en> accessed 29 May 2021.
[9] Commission Staff Working Document Impact Assessment Report - Accompanying the document Proposal for a regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act) [4.2], 30.

EU level in order to avoid fragmentation that could otherwise undermine the functioning of the internal market. As stated in the explanatory memorandum to the DMA, the DMA's goal is to complement competition rules by addressing "unfair practices by gatekeepers that either fall outside the existing EU competition rules, or that cannot be as effectively addressed by these rules".[10] The DMA arguably "minimises the detrimental structural effects of unfair practices ex-ante" and, at the same time, it leaves open the possibility of further ex-post intervention by EU or national competition law enforcement.

The DMA has been very criticised, as pointed *out infra* at paragraph 4 above, since its proposal due to its potential impact on competition and, in particular, on some of the largest firms in the digital sector. The DMA appears to embrace two objectives: one is to ensure that the digital markets in which gatekeepers operate are and remain contestable.[11] A second objective is the promotion of fairness within these markets.[12] It is worth noting that the Digital Markets Act is not aimed at replacing the traditional antitrust system, but it intends to act as a complementary tool by means of a new set of *ex-ante* obligations that platforms identified as gatekeepers should abide by.

In this regard, the DMA shall be read as a simplified version of competition law, which strives to address perceived gaps in EU competition law as applied to digital markets controlled by gatekeepers.

Gatekeepers are providers of "gateways for a large number of business users to reach end users". Article 3 of the DMA provides a definition of gatekeeper based on both quantitative and qualitative criteria. With regards to the first one, gatekeepers are companies that play a significant role in the internal market because of their size and their importance as gateways for business users to reach their consumers.

More specifically, pursuant to article 3, gatekeepers are digital platforms with (i) over 45 million active users each month, (ii) a turnover of Euro 6.5 billion or more in the last three financial years, (iii) operations in at least 3 of the 27 EU Member States.

The DMA further defines qualitative criteria that should be considered when identifying a gatekeeper. Indeed, a gatekeeper shall (i) have a significant impact on the internal market, (ii) operate a core platform service that serves as an important gateway for business users to reach end users, and (iii) enjoy an entrenched and durable position in its operations or it is foreseeable that it will enjoy such a position soon.

[10] See Regulation of the European Parliament and of the Council on contestable and fair market in the digital sector (Digital Markets Act), [2020], <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020PC0842&rid=8> accessed 26 May 2021.

[11] For an economic perspective on fairness and contestability see: Jacques Crémer, Gregory. S. Crawford, David Dinielli, Amelia Fletcher, Paul Heidhues, Monica Schnitzer, Scott Morton, and Katja Seim 'Fairness and contestability in the Digital Markets Act', Policy Discussion Paper No. 3, Digital Regulation Project, *Yale Tobin Center for Economic Policy* [2021].

[12] Recitals 4 and 5 of the Digital Markets Act.

Some of the main criticisms concern first the criteria used to define gatekeepers. Schweitzer assumed that the quantitative criteria seem overly focused on size rather than on actual gatekeeping power and it does not take into proper consideration other companies that actually create a significant distortion of competition. In particular, the above quantitative threshold would be used to determine whether a specific platform shall be compliant with the obligations irrespective of *evidence of harm* in the marketplace.

3 Gatekeepers' obligations

After defining gatekeepers, the DMA lists under articles 5 and 6 numerous preventive obligations that gatekeepers shall comply with on a daily basis; for example, gatekeepers must:

(i) refrain from combining personal data sourced from core platform services with personal data from any other services.
(ii) allow the installation and effective use of third-party software applications or software application stores in the gatekeeper's own operating system;
(iii) refrain from treating more favourably their own ranking services and products compared to similar third-party services or products;
(iv) provide advertisers and publishers with information concerning the price paid by the advertiser and remuneration paid to the publisher in the context of gatekeepers that provide advertising services.

Furthermore, article 6 deals with self-preferencing, discriminatory ranking, and data-sharing obligations and it provides a so-called "blacklist". Operators included in such blacklist are subject to many obligations that will apply automatically across all business models and core platform services, but they are "susceptible of being further specified" due to the transformative potential they have.[13]

Without aiming to provide in this paper an exhaustive list, it is worth noting that the above obligations can be split into two categories: some of the obligations pursue to preserve fairness and contestability, whereas others' aim is to limit potential conflicts of interest.

4 Main Criticisms

After having very briefly discussed the main features of the Digital Markets Act, we would like now to focus on some of the main criticism regarding the new regulation.

[13] Pablo ibáñez Colomo, 'The Draft Digital Markets Act: A Legal and Institutional Analysis' [2021] 12(7) Journal of European Competition Law & Practice 561.

Firstly, it must be underlined that DMA is supposed to overcome the current regulatory fragmentation in the EU if there are no common rules at the EU level concerning the digital markets. Nonetheless, many States are now in the process of adopting national regulations and, therefore, one of the main risks that may arise concerns the potential increase of legal fragmentation and uncertainty; the Commission shall therefore carefully prevent this fragmentation by issuing precise guidelines regarding the adoption and the implementation of the new regulation.[14]

Moreover, with reference to the potential impact of the new regulation (based on ex-ante remedies) on competition within digital markets, we find it useful to take a step back to the economic notions of competition and regulation. Walras's law is an economic theory that suggests that all markets work towards market equilibrium, where supply and demand find balance. Within this framework, competition shall, if embraced in a productive manner, naturally lead to innovation, adaptation, and growth and it shall therefore be protected by the State. In the event competition is at risk, the State is entitled to intervene and to limit the private economic sphere to facilitate potential competitors in entering the market.

Regulation is defined by Selznick as "*the sustained and focused control exercised by a public authority over activities valued by the community*".[15]

If, therefore, *regulation* intervenes *ex-ante* to define a framework of rules inspired by the principle of competition and compatible with the market, the antitrust intervention (competition) is aimed at verifying - *ex -post* - the possible illegality of anti-competitive behaviours, where the 'rules' leave operators margins of discretion in their application.

Competition law and regulation are often presented as alternative approaches to govern competition and address market failures, commonly understood as the inability of the market to be as efficient as it could.[16]

R. Cohpra and L. Khan argue that competition law, based on ex-post remedies, cannot be preferred to *ex-ante* regulation in all instances. First, regulation can pursue goals other than pure market efficiency and can tackle challenges other than market power, such as health concerns and safety standards. On the other hand, a lack of competition can enable dominant firms to exercise their market power in harmful ways.[17]

[14] Aina Turilazzi and Carlo Stagnaro, "Noting lasts forever (even the gatekeeper's market share); The implications of the Digital Markets Act for businesses, consumers and innovation" IBL Special Report [2022].
[15] Philip Selznick 'Focusing organisational research on regulation', in Noll Roger (ed) *Regulatory policy and the social sciences* (Berkeley: University of California Press 1985).
[16] Eugene F Fama, 'Efficient Capital Markets: A Review of Theory and Empirical Work' [1970] 25(2) The Journal of Finance 383; Howard Shelanski, 'Antitrust and Deregulation' (2018) 127 YALE L. J. 1922, 1943; see also Don Boudreaux and Robert B Ekelund, 'Regulation as an Exogenous Response to Market Failure: A Neo-Schumpeterian Response' [1987] 143(4) Journal of Institutional and Theoretical Economics (JITE) / Zeitschrift Für Die Gesamte Staatswissenschaft 537.
[17] Rohit Chopra, Lina M. Khan, 'The Case for "Unfair Methods of Competition Rulemaking' [2020] *The University of Chicago Law Review*, 358.

With reference to digital platforms, one of the main goals of the DMA is to ensure (contestability and) fairness, which represents an important pillar of the market economy. In this regard, the new set of rules is aimed at ensuring a basic level of fairness in a framework – grounded on art. 101 and 102 TFUE - where the market is no longer able to find its own balance without State intervention.

The intervention through *ex-ante* rules, such as those contained in the DMA, include at least two risks, both of which are recognised in the Legislative Financial Statement Accompanying the DMA. The first is the risk that rules may be ineffective due to legal uncertainties related to the obligations, and the second is the risk that the rules may be ineffective due to material changes in fact.[18]

Furthermore, DMA may not take into proper consideration certain aspects regarding the need to protect competition. First of all, even though the new legislative tool imposes restrictions on gatekeepers in terms of openness to new players, digital platforms are so valuable to users that they would likely to still choose their services even if the DMA makes it easier for users to abandon it, the so-called "value-driven lock-in". A feasible strategy for companies to obtain a strong advantage over their competitors, in fact, is of "to spin a web of software applications that competitors can't match and customers won't ever abandon!".[19] In the case of the value-driven lock-in, the user who leaves the platform will not have to incur any costs, however, he will renounce the value he previously derived from it.

P. Bergkamp argues that DMA may have a broader effect than only preventing competition distortion. Indeed, provided that, so far, the violations of the EU competition law have been sanctioned only through *ex-post* economic fines, companies were still able to behave anti-competitively accepting the risk of subsequent investigation and fines.[20] In this regard, Bergkamp argues that "*the expected benefits accruing from the anti-competitive behaviour could outweigh the expected costs of the investigation and fine. In the DMA's ex-ante regime, the obligations imposed on big tech apply irrespective of any actual effects on competition*".[21]

Furthermore, the adoption of DMA may slow the digital technology industry in Europe because of the increase in regulatory costs, and it may reduce opportunities for a partnership between the European less digitised firms and very big US companies that are essential in order to speed up digitisation efforts.[22] In this regard, the new

[18] Pinar Akman, 'Regulating Competition in Digital Platform Markets: A Critical Assessment of the Framework and Approach of the EU Digital Markets Ac'" [2022] *47 European Law Review 85.*
[19] Eric K. Clemons, New Patterns of Power and Profit. A Strategist's Guide to Competitive Advantage in the Age of Digital Transformation (1st edn, Springer 2019).
[20] Penelope Bergkamp, 'The proposed EU Digital Markets Act: A New Era for the Digital Economy in Europe' [2021] 18(5) European Company Law 152-161.
[21] ibid
[22] Meredith Broadbent, Implications of the Digital Markets Act for Transatlantic Cooperation", Center for Strategic and International Studies (CSIS) [2021].

regulation, aimed at ensuring open access to the digital market by smaller players seems to ignore the competition dynamics that gatekeepers currently bring to the market in terms of innovation and investment incentives. As a consequence, the DMA, if not carefully implemented, may weaken some of the functionalities of digital platform services that create value for users.[23]

Moreover, analysts point out that the restrictions imposed by DMA may also reduce the investment related to future technology innovations and it would suppress their ability to develop the already existing products.[24]

5 Conclusions

In conclusion, the current legal framework is clearly no longer adequate to deal with most of the main anti-competitive concerns raised by online platforms and current competition policies, based on *ex-post* remedies, have not delivered the desired results in order to ensure that markets remain competitive and contestable.

As a result, it is surely time to assert control over the ways in which platforms and other digital actors operate. Despite the numerous doubts about some of the provisions of the new regulation, some form of the regulatory response to the challenges raised within the digital economy is necessary, provided that it cannot be resolved by continuing to rely on antitrust or hoping that the market will find an acceptable balance without any intervention.

In this sense, the Digital Markets Act represents without a doubt the first step towards a more fair and contestable market if designed in an adequate manner to target specific problems. Lawmakers, within the approval and implementation process, shall ensure the DMA, once approved in its final version, does not reduce competitiveness and productivity due to the regulatory costs and the restrictions it imposes.

[23] Copenhagen Economics, "The implications of the DMA for external trade and EU firms. Exploring the potential impact of the DMA in EU" [2021] <https://www.copenhageneconomics.com/dyn/resources/Publication/publicationPDF/8/568/1623318729/copenhagen-economics-study-of-dma-implications-on-eu-external-trade.pdf> accessed 23 May 2021.
[24] ibid.

Berrak Genç-Gelgeç*

REGULATING DIGITAL PLATFORMS: WOULD THE DSA AND THE DMA WORK COHERENTLY?

Abstract

The Digital Services Act (the DSA) and the Digital Markets Act (the DMA) were proposed as part of the Digital Services Package with the goal of creating a more open, safer and fairer digital space in the European Union. To do so, both proposals establish new sets of horizontally applicable rules. These rules mostly consist of obligations that digital platforms shall fulfil. In this respect, both initiatives reflect a change in the approach adopted by the European legislators in regulating the digital world: establishing rather stringent and detailed rules and obligations for platforms to follow to create a fairer and safer digital space instead of leaving them to be the self-regulators as they have since been. In pursuit of this overarching and arguably ambitious goal, the DSA and the DMA are aimed at tackling different issues emerging from the digital world by focusing on different platforms. The DMA's focus is on gatekeeper online platforms that are considered to have a major economic and societal impact on the market. Their entrenched and durable position in the digital market is considered to negatively affect competition and fairness; hence the DMA sets out new codes of conduct for gatekeepers to satisfy. On the other hand, the DSA undertakes to update the law on intermediaries' liability from illegal content made available by third parties on their platforms, by replacing the existing liability exemptions with a more wide-ranging legal framework. The DSA's focus is on service providers of different sizes and services, namely intermediaries, hosting intermediaries including online platforms, online platforms and very large online platforms. By imposing asymmetric obligations on these certain platforms, the DSA aims to limit the availability of illegal content and to protect fundamental rights, whereas the DMA's objective is to establish a level playing field to foster innovation, growth as well as competitiveness in the digital market. The DSA recognises platforms as important and responsible actors in tackling online infringements given their strong position and infrastructural advantages. Hence, it obliges them to comply with the obligations established according to their sizes and the type of services provided. These obligations can be specified as transparency and accountability obligations. In the same vein, the DMA obliges gatekeepers to comply with more restrictive rules as they are considered to have a major impact and control over digital markets. The obligations established by the DMA are ex-ante measures concerning competition practices/unfair competition.

Nevertheless, the fact that the two analysed proposals focus on different platforms and pursue different direct goals does not mean that a service provider could not be subjected to the obligations of the DSA and the DMA at the same time. When a very large online platform is also a core service provider and qualifies as a gatekeeper within the meaning of the DMA, it might be subjected to the provisions of both

* Lecturer in Civil and Obligations Law, Istanbul Medeniyet University Law School. (LLM, Soton; PhD, Sussex); berrakgenc@hotmail.com; ORCID: 0000-0001-5166-8965. This paper considers the consolidated version of the DSA that was adopted on 20 January 2022 and the proposal of the DMA dated 15 December 2020.

Acts. This brings the question of how effectively and coherently the two Acts would apply in practice. The proposals explicitly state that both Acts complement each other and should work in coherence. However, the question of whether this goal is indeed achieved cannot be addressed without undertaking a detailed examination of the rules in question. With this in mind, the paper seeks to assess whether the DSA and the DMA would work coherently.

JEL CLASSIFICATION: K13, K2, K20, K10

SUMMARY

1. Introduction

The proposals of the Digital Services Act (the DSA)[1] and the Digital Markets Act (the DMA)[2] are the main legislative initiatives of the European Commission's digital strategy, namely, the Digital Services Package, which was introduced in December 2020. The main purpose of this agenda is to regulate digital services in the European Union (EU).[3] In pursuit of this arguably ambitious goal, these two acts are aimed at dealing with different issues. The DSA is proposed to update the law on intermediaries' liability from illegal content made available by third parties on their platforms, and accordingly to replace the E-Commerce Directive 2000/31 (the ECD).[4] The DMA on the other hand, focuses on certain actors in digital markets to create a level playing field to foster innovation, growth as well as competitiveness in the digital economy.

The DSA proposal establishes the rules to limit the availability of illegal content and to protect fundamental rights. In doing so, it does not fundamentally change the current rules on intermediaries' liability that are established by the ECD. As with the ECD, the DSA's approach in dealing with intermediaries' liability is to provide safe harbour rules for certain activities of intermediaries.[5] These rules briefly stipulate that internet

[1] Commission, 'Proposal for a Regulation on a Single Market for Digital Services (Digital Services Act) and amending Directive 2000/31/EC' COM(2020)825 final (the DSA).

[2] Commission, 'Proposal for a Regulation on contestable and fair markets in the digital sector (Digital Markets Act)' COM (2020) 842 final (the DMA).

[3] For an analysis of their impact on the European Integration Policy, see Annegret Bendiek, 'The Impact of the Digital Service Act (DSA) and Digital Markets Act (DMA) on European Integration Policy: Digital Market Regulation as One of Five Major Digital Policy Projects of the EU', Research Division EU, Working Paper no. 02 (2021) ch 3.

[4] Council Directive (EC) 2000/31 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce) [2000] OJ L178/1 (the ECD).

[5] Those are mere conduit, caching and hosting intermediaries, as it is established in arts 12–15 of the ECD. The DSA does not fundamentally revise these rules.

intermediaries which provide mere conduit, caching and hosting services would be granted immunity from liability that might arise from third parties' illegal content which is made available on their platforms unless they contribute to the dissemination of illegal content themselves.[6] While maintaining the immunity regime for intermediaries, the DSA, different from the ECD, importantly acknowledges their strong position and infrastructural advantages in tackling online infringements.[7] Hence, it proposes new sets of due diligence obligations, some of which appear as ex-ante obligations, for digital services to fulfil.

More importantly, different obligations are proposed for digital platforms depending on their sizes and the nature of their services. Accordingly, the obligations are divided into four categories: obligations for all digital services; hosting intermediaries; online platforms[8] and very large online platforms (VLOPs). Put simply, all digital services are required to establish a single point of contact or designate a legal representative if they do not have establishments within the EU to facilitate communication with relevant authorities (Articles 10–11); to include the relevant and necessary information related to the implemented measures, imposed restrictions as well as the procedures followed in the terms and conditions (Article 12) and to publish annual reports on their enforcement measures, more specifically on any content moderation they engaged in (Article 13). Further to these obligations of a general nature, hosting services are required to implement a notice-and-action mechanism in their services to limit the availability of illegal content (Article 14). In addition, transparency obligations are imposed on hosting intermediaries concerning their decisions on removing or blocking content (Article 15). The Article concerned requires hosting intermediaries to inform the recipient about the decision taken and to provide a clear and specific statement of reasons for that decision. In addition to these, online platforms (providers of hosting services that also disseminate information)[9] have further obligations imposed on them (Articles 16–24). Briefly, they are required to make an internal complaint-handling system available on their platforms for their recipients to lodge complaints against the decisions taken by online platforms about the illegal content as well as to engage with out-of-court dispute settlement bodies if the recipient chooses to resolve the dispute

[6] The immunity rules established in arts 3–5 of the DSA are almost a verbatim copy of the ECD's immunity rules.

[7] Buri and van Hoboken argue that the imposition of accountability obligations might actually entrench the dominant position of the intermediaries although the exact opposite is aimed with such obligations. Ilaria Buri and Joris van Hoboken, 'The DSA Proposal's Impact on Digital Dominance', in Heiko Richter, Marlene Straub and Erik Tuchtfeld (eds), *To Break Up or Regulate Big Tech? Avenues to Constrain Private Power in the DSA/DMA Package* (2021) Max Planck Institute for Innovation and Competition Research Paper No 21–25, 10 <https://ssrn.com/abstract=3932809> accessed 29 October 2022.

[8] Art 2(h) DSA.

[9] ibid.

that way. Besides, they are obliged to fulfil different information and transparency obligations, such as reporting obligations related to online advertising or implemented measures and procedures for illegal content. Finally, online platforms that have more than 45 million recipients are considered separately. These platforms are designated as VLOPs and they have further obligations imposed on them (Articles 25–33). These obligations briefly require VLOPs to conduct systematic risk assessments on the operation and the use of their services and to implement appropriate mitigation measures accordingly; to appoint a complaint officer to monitor their compliance with the obligations; to deploy recommender systems or display online advertising on their online interface in a transparent manner, and to fulfil additional reporting obligations.

A similar approach is adopted in the DMA. In creating a fair and innovative level playing field for digital services, the DMA differentiates the platforms according to their sizes as well as their presumed impact within the market. Then, the obligations are proposed to set out for the platforms which qualify as gatekeepers. A gatekeeper is defined as a provider of core services and those services are specified as follows:

'(a) online intermediation services, (b) online search engines, (c) online social networking services, (d) video-sharing platform services, (e) number-independent interpersonal communication services, (f) operating systems, (g) cloud computing services, (h) advertising services, including any advertising networks, advertising exchanges, and any other advertising intermediation services, provided by a provider of any of the core platform services listed in points (a) to (g)'.[10]

It follows that providers of services other than these are exempted from the DMA's scope.

To be designated as a gatekeeper, however, a provider of core services shall also fulfil certain qualitative and quantitative criteria established by the DMA. Although these will be assessed later in detail, one of the quantitative criteria should be considered here to demonstrate the possible interaction between the DSA and the DMA. According to proposed Article 3(2)(b) DMA, a provider of core platform services is presumed to satisfy one of the qualitative criteria,[11] if a core platform service 'has more than 45 million monthly active end users established or located in the Union and more than 10.000 yearly active business users established in the Union in the last financial year'.[12] It follows that a core platform service that has more than 45 million monthly active end users would qualify as a gatekeeper under the DMA, whilst it could also be designated

[10] Art 2 DMA.

[11] Art 3(1)(b) DMA: 'it operates a core platform service which serves as an important gateway for business users to reach end user.'

[12] This, however, is a rebuttable presumption, as stated.

as a VLOP under the DSA. Therefore, it would be subject to the different obligations that are imposed by both the DSA and the DMA.

The proposed DMA introduces new sets of rules for gatekeepers to comply with, as they are considered to have a major impact and control over the digital market and almost a regulatory power over the market. To create a level playing for all sizes of platforms and to protect competition, gatekeepers have ex-ante obligations imposed on them. These obligations are stipulated by Articles 5 and 6. These two sets of obligations are differentiated from each other as the obligations set out by Article 6 are 'susceptible of being further specified',[13] while Article 5 obligations are 'self-executing', although these all are directly applicable. These articles introduce prohibitions as well as rules to be followed by gatekeepers, which are aimed at providing fairness, protecting contestability, and striking a balance between the interests of the parties involved such as end users, business owners, and digital platforms other than gatekeepers. Briefly, the obligations are as follows: the obligation not to combine personal data across the services, unless consent is given by a user (Article 5(a)); to allow business users to offer the same products or services to end users (Article 5(b)) as well as to allow them to promote offers to end users acquired via the core platform service and to conclude contracts with these end users (Article 5(c)); to provide advertisers and publishers with information concerning advertising services provided by the gatekeeper upon request (Article 5(g)); not to use private data generated through their business users' activities in competition with them (Article 6(1)(a); not to restrict end users to switch between and subscribe to different software applications (Article 6(1)(e) as well as to allow them to install and use third-party software obligations (Article 6(1)(c)).

Against the general framework provided above, it is evident that the DSA and the DMA took on the task of enhancing different aspects of the digital world. That being said, and as underlined in the Digital Services Package, the Acts are also intended to work coherently. This begs the question of their coherence and compatibility with one another. Accordingly, whether these legislative initiatives indeed would work in coherence is the question that this paper aims to address. To do so, it first sets out in more detail what the proposals entail for online platforms. Second, and more important, it seeks to identify the interplay between the Acts and the obligations similar in nature to assess the compatibility and coherence of the two analysed proposals.

[13] Although article 6 obligations are 'susceptible of being further specified', recital 58 DMA explains that the Commission might specify the measures for the gatekeeper in certain cases and if a dialogue with the gatekeeper concerned indicates to do so. However, such a cooperation between the Commission and a gatekeeper (a dialogue) is not a condition for the application of article 6 obligations and this might happen in certain cases. Therefore, how effectively gatekeepers would comply with these obligations is doubted in default of the clarification of the exact framework of the measures that should be applied.

2. Regulating digital platforms: imposing different obligations for different purposes

To fulfil the goal of regulating digital platforms, the proposals of the DSA and the DMA are aimed at regulating different aspects of the digital world. The DSA is proposed to update the rules governing digital platforms and provide a clear and harmonised legal framework that also protects the fundamental rights of the parties in the digital world. On the other hand, the DMA is introduced to make the digital market fairer and more balanced for all actors involved. To fulfil their respective objectives, the DSA recognizes digital platforms as responsible actors and imposes obligations on them, while the DMA focuses on one group of powerful actors in the digital market, namely gatekeepers. The DMA thus sets out obligations for gatekeepers in order to maintain a competitive market for all actors. That being said, as part of the digital agenda, these two legislations are proposed to complement each other in fulfilling the ambitious goal of regulating digital platforms.

Starting with the DSA, the proposal establishes a legal framework related to digital platforms' possible liability that might arise from third parties' infringing activities. To tackle liability issue, the DSA reproduces the rules on the immunity regime that are established by its predecessor, the ECD, with small adjustments.[14] Additionally, the DSA establishes new sets of asymmetric due diligence obligations and enforcement rules to reach the aim of a more transparent and balanced online world. Although those obligations differ depending on the nature of the services provided as well as the sizes of the digital platforms, they mostly are transparency obligations of different nature. These are to be addressed now within the relevance of the paper's aim.

The transparency obligations can be categorised as follows: the obligations relating to the terms and conditions (TCs) of digital services, the obligations on transparency reporting, the obligations on advertising, and the obligations concerning risk

[14] The addition is made concerning hosting intermediaries, more specifically online marketplaces. Briefly, the article (article 5(3)) excludes online marketplaces from immunity if their liability from customer protection law arises when an online marketplace *'lead[s] an average consumer to believe that the information […] is provided either by the online platform itself or by a recipient of the service who is acting under its authority or control'*. Besides, there are some additions that are related to the immunity regime made in recitals such as the neutrality test in recital 20. For a detailed discussion on this see, Miriam Buiten, 'The Digital Services Act: From Intermediary Liability to Platform Regulation' (2021) 12 JIPITEC 361; Andrej Savin, 'The EU Digital Services Act: Towards a More Responsible Internet' (2021) Copenhagen Business School Research Paper No. 21–04 Journal of Internet Law <https://ssrn.com/abstract=3786792> accessed 29 October 2022; The European Consumer Organisation (BEUC), The Digital Services Act – BEUC position paper (*BEUC,* 9 April 2021) 9, <www.beuc.eu/publications/beuc-x-2021-032_the_digital_services_act_proposal.pdf> accessed 29 October 2022; Miquel Peguera, 'The Platform Neutrality Conundrum and the Digital Services Act' (2022) 53 IIC – International Review of Intellectual Property and Competition Law 681.

assessments and data. Starting with the first one, all providers of internet intermediaries are required to have certain clauses included in their TCs. As per Article 12, they are obliged to include any information relating to their content moderation, such as restrictions that might be imposed on users or policies to be followed in their TCs. Further, Article 13 requires intermediaries to publish annual and detailed reports on any content moderation they engaged in. These obligations are aimed at providing transparency on intermediaries' content moderation and compelling intermediaries to act in accordance with the rules in tackling illegal content. Article 12 also underlines the importance of protecting the fundamental rights of the parties who are subject to the actions taken by intermediaries as part of their content moderating. Hosting intermediaries are further required to provide a user, whose content is removed or blocked access to, with a statement of reasons about a decision (Article 15). This statement shall include information on the contractual or legal grounds relied upon in taking the decision and an explanation of why the content is not compatible with the TCs of the hosting intermediary if the decision is grounded in contractual provisions. In addition to that, online platforms –providers of hosting services that also disseminate information-[15] are obliged to have a clause explaining the measures to be applied against the misuse in their TCs (Article 20). Finally, both online platforms and VLOPs have further transparency obligations imposed on them related to the recommender systems, if they are using them. The recommender system is defined in Article 2(o) of the proposed DSA as 'a fully or partially automated system used by an online platform to suggest, prioritise or curate in its online interface specific information to recipients of the service, including as a result of a search initiated by the recipient or otherwise determining the relative order or prominence of information displayed'. Since such systems can exert a significant influence on the users' ability to reach information and perhaps on their choices of information, the influence that online platforms and VLOPs could gain through the use of these systems is now limited by transparency obligations.[16] In that regard, online platforms (Article 24(a)) and the VLOPs (Article 29) are obliged to clearly set out the parameters used for recommender systems as well as the options for their users to modify or influence these parameters in their TCs.

In terms of transparency reporting, all providers of internet intermediaries are subjected to a duty to publish annual reports providing detailed information on all relevant facts of their content moderation (Article 13). Online platforms and the VLOPs

[15] Art 2(h) DSA.

[16] Giovanni De Gregorio and Oreste Pollicino, 'The European Constitutional Road to Address Platform Power' in Heiko Richter, Marlene Straub and Erik Tuchtfeld (eds), *To Break Up or Regulate Big Tech? Avenues to Constrain Private Power in the DSA/DMA Package* (2021) Max Planck Institute for Innovation and Competition Research Paper No 21–25, 16, 20 <https://ssrn.com/abstract=3932809> accessed 29 October 2022.

are also obliged to publish additional reports and include more information on their reports in parallel with the further obligations imposed on them relating to content moderation, such as the implementation of internal complaint-handling systems or engaging with out-of-court dispute settlement bodies. In that regard, the transparency reports published by online platforms shall include information about the measures applied in tackling illegal content including disputes referred to the out-of-court dispute settlement bodies (Article 23),[17] while the VLOPs are obliged to publish their reports every six months and to have information about their risk assessment, related mitigation measures and their audit and audit implementation reports included in those reports (Article 33).

With regard to online advertising activities, only online platforms and the VLOPs are made subject to the transparency obligations to tackle the possible risks that could be posed through the use of advertisement systems of platforms, such as facilitating the availability of illegal content, financially incentivising harmful or illegal content, or even displaying manipulative information or disinformation that would have a negative impact on the public. In fact, more stringent obligations are imposed on the VLOPs due to 'their scale and ability to target and reach recipients of the service based on their behaviour within and outside that platform's online interface'.[18] Accordingly, they are obliged to create a repository that shall have certain information about advertisements displayed on their interfaces, such as the content of the advertisement, the period of its display and the natural or legal person on whose behalf the advertisement is displayed. This repository should also be made publicly available. Online platforms other than the VLOPs are however exempted from the obligation to create a repository for their online advertising. They are only required to provide users with information on each specific advertisement displayed that would help them to identify advertisements as well as the way the advertisements are displayed.

Finally, the VLOPs are subjected to further transparency obligations relating to risk assessments and data. 'Given the importance of very large online platforms, due to their reach, in particular as expressed in a number of recipients of the service, in facilitating public debate, economic transactions and the dissemination of information, opinions and ideas and in influencing how recipients obtain and communicate information online',[19] the VLOPs are obliged to conduct systematic risk assessments (Article 26) and to put in place mitigation measures accordingly (Article 27). They are also made the subject of independent audits to assess their compliance with the obligations set out by

[17] Pursuant to art 19 DSA, online platforms are also obliged to take the necessary technical and organisational measures with regard to the notices submitted by trusted flaggers.
[18] Recital 63 DSA.
[19] Recital 53 DSA.

the DSA. Such audits would assist in providing transparency as well as effective enforcement. Concerning data transparency, the VLOPs are required to allow certain people, namely vetted researchers who are affiliated with academic institutions, vetted not-for-profit bodies, organisations or associations and the Digital Services Coordinators (DSCs)[20] and the Commission to access the data required (Article 31). More significantly, the VLOPs are obliged 'to explain the design, logic and the functioning of the algorithms if requested by the Digital Service Coordinator of establishment'[21] when it is necessary to assess the risks or the VLOPs' compliance with the rules. This obligation appears very crucial in limiting the VLOPs' discretion over the users' activities as well as protecting users' fundamental rights since information prioritisation is mainly done through algorithms used by the VLOPs.

Transparency obligations set out by the DSA proposal are aimed at establishing standards on content moderation practices of digital services as well as limiting providers' acquired power over users' activities and the dissemination of information through the algorithms or parameters implemented. Indeed, the transparency aimed by these obligations would be instrumental to understanding how these platforms work and would make it easy to assess the providers' compatibility with the rules by means of enforcement. This should also provide users with more understanding and transparency over the information made available including advertisements displayed on those platforms. Arguably, this would also lead users to have more control over how to obtain and communicate information hosted by digital services.[22]

The DMA, by contrast, focuses on competitiveness within the digital market.[23] It accordingly aims to strike a balance between the digital platforms of different sizes and to 'minimise(s) the detrimental structural effects of unfair practices ex-ante'[24]. As

[20] Art 38 DSA. Digital Services Coordinators are appointed by each member states as an authority responsible for the supervision of intermediaries in each member states.

[21] Art 31(1a) DSA.

[22] Eifert and others describe the position of platforms over information as looking through a 'one-way mirror', meaning that platforms know a lot of things about users whereas users' knowledge on how their information is processed and used and if they are influenced through algorithms of platforms is very limited. Martin Eifert, Axel Metzger, Heike Schweitzer and Gerhard Wagner, 'Taming the Giants: The DMA/DSA Package' (2021) 58 CML Rev, 987, 992.

[23] The legal framework established is also directly related to the matters of competition law and it is proposed to complement EU's competition law. For a detailed assessment of the DMA from a competition law perspective, see Pınar Akman, 'Regulating Competition in Digital Platform Markets: A Critical Assessment of the Framework and Approach of the EU Digital Markets Act' (2022) 47 E.L. Rev. 85; Pablo Ibáñez Colomo, 'The Draft Digital Markets Act: A Legal and Institutional Analysis' (2021) 14–20 <https://ssrn.com/abstract=3790276> accessed 29 October 2022; Giorgio Monti, 'The Digital Markets Act – Institutional Design and Suggestions for Improvement' (2021) TILEC Discussion Paper No 2021–04 <https://ssrn.com/abstract=3797730> accessed 29 October 2022.

[24] Explanatory Memorandum to the DMA proposal, Commission, 'Proposal for a Regulation on contestable and fair markets in the digital sector (Digital Markets Act)' COM (2020) 842 final, 4.

mentioned before, platforms are distinguished by their sizes as well as their presumed impact and power over the digital market by the DMA proposal and the obligations are imposed on the actors regarded as the most powerful, namely on gatekeepers. A gatekeeper is defined as a provider of core platform services that fulfils quantitative and qualitative criteria set out by the DMA. According to the qualitative criterion, a provider of core platform services is regarded as a gatekeeper if '(a) it has a significant impact on the internal market; (b) it operates a core platform service which serves as an important gateway for business users to reach end-users; and (c) it enjoys an entrenched and durable position in its operations or it is foreseeable that it will enjoy such a position in the near future.' Following these, Article 3(2) DMA proposal sets out three different quantitative thresholds for each criterion above and establishes that if a provider of a core platform service fulfils one of those quantitative thresholds, then it is presumed to have satisfied the corresponding qualitative criterion. In relation to the paper's focus, Article 3(2)(a) DMA prescribes that if the provider 'achieves an annual EEA turnover equal to or above EUR 6.5 billion in the last three financial years, or where the average market capitalisation or the equivalent fair market value of the undertaking to which it belongs amounted to at least EUR 65 billion in the last financial year, and it provides a core platform service in at least three Member States',[25] then it is presumed to have a significant impact over the market, accordingly it is qualified as a gatekeeper. Similarly, Article 3(2)(b) DMA establishes that where a provider provides a core platform service that 'has more than 45 million monthly active end users established or located in the Union and more than 10.000 yearly active business users established in the Union in the last financial year' it is designated as a gatekeeper. However, as these quantitative criteria are based on the presumption, a qualifying platform may rebut these presumptions by presenting sufficiently substantiated arguments to the Commission for an assessment.[26]

Once the platform qualifies as a gatekeeper, it becomes subject to certain rules of conduct set out by Articles 5 and 6 of the DMA. As mentioned above, the obligations specified by Article 5 are 'self-executing', while Article 6 obligations are categorised as 'susceptible of being further specified'. These obligations directly apply and must be fulfilled by a gatekeeper for each core service it provides. As briefly mentioned above,

[25] The threshold for annual turnover, however, appears to be amended as a result of the provisional agreement between the Council and the Parliament reached on 25 March 2020. Accordingly, the threshold is increased to 'an annual turnover of at least €7.5 billion within the European Union (EU) in the past three years or have a market valuation of at least €75 billion' according to the information publicly made available by the Council <www.consilium.europa.eu/en/press/press-releases/2022/03/25/council-and-european-parliament-reach-agreement-on-the-digital-markets-act/> accessed 29 October 2022.

[26] Art (3)(4) DMA. Akman claims that the rejection of the arguments on the rebuttal by the Commission may also be subject to the judicial review by the Court of Justice of the European Union. Akman (n 23) 92.

some obligations consider data protection and the gatekeeper's use of data such as prohibiting them to combine data without specific consent given by the user or the obligations and prohibitions on unfair practices.[27] However, this paper focuses on transparency obligations given that transparency obligations imposed by the DSA as well as the DMA may overlap. In this regard, Article (5)(g) DMA obliges gatekeepers to provide 'advertisers and publishers to which it supplies advertising services, upon their request, with information concerning the price paid by the advertiser and publisher, as well as the amount of remuneration paid to the publisher, for the publishing of a given ad and for each of the relevant advertising services provided by the gatekeeper'. With this obligation, the DMA establishes a transparency regime for advertising services and obliges gatekeepers to provide necessary information on advertisements, such as the price paid by the advertiser and publisher or the remuneration paid to them. This obligation would provide a fair and competitive market for advertisers and publishers through the transparency provided on platforms' advertising activities as they would be able to make informed decisions on advertising services based on the information provided. To fulfil the same purpose, Article (6)(g) DMA also requires gatekeepers to provide advertisers and publishers with access to 'the performance measuring tools of the gatekeeper and the information necessary for advertisers and publishers to carry out their own independent verification of the ad inventory' upon request.

Further, the DMA sets out reporting obligations for gatekeepers to comply with (Articles 12–13), although those are not as broad as the DSA's ones. Article 12 DMA obliges a gatekeeper to inform the Commission about any intended concentration involving another provider of core platform services or any other services provided in the digital sector as well as to inform about such concentration before its implementation and following the conclusion of the agreement. If such additional core platform service satisfies the quantitative criterion, a gatekeeper is also required to inform the Commission about that following the concentration. Besides, Article 13 DMA imposes an audit obligation on gatekeepers. Under this obligation, a gatekeeper is required to submit, within six months after its designation as gatekeeper and at least annually, an independent audited description of any techniques applied for consumer profiling. This description should include information on the followings: 'whether personal data and data derived from user activity is relied on, the processing applied,

[27] Arts (5)(a) and (b) DMA. Although art 5(a) requires a gatekeeper to obtain explicit consent from an end user to combine data, Graef asserts that a condition of explicit consent would still not ensure competition within the market as it is desired. She claims that gatekeepers' data-combining practices should be limited to the cases only where it is necessary to perform the contract. Inge Graef, 'Why End-User Consent Cannot Keep Markets Contestable' in Heiko Richter, Marlene Straub and Erik Tuchtfeld (eds), *To Break Up or Regulate Big Tech? Avenues to Constrain Private Power in the DSA/DMA Package* (2021) Max Planck Institute for Innovation and Competition Research Paper No 21–25, 78 <https://ssrn.com/abstract=3932809> accessed 29 October 2022.

the purpose for which the profile is prepared and eventually used, the impact of such profiling on the gatekeeper's services, and the steps taken to enable end users to be aware of the relevant use of such profiling, as well as to seek their consent'.[28] With this enhanced transparency on profiling, the aim is to 'facilitate contestability of core platform services, by putting external pressure on gatekeepers to prevent making deep consumer profiling the industry standard, given that potential entrants or start-up providers cannot access data to the same extent and depth, and at a similar scale' as well as to eliminate 'the potential negative effects of the observed practice of gatekeeper to collect and accumulate large amounts of data from end-users' on data protection and privacy rights of users.[29] Besides, the proposal highlights the importance of the fundamental rights of the parties who would be affected by the application of the rules set out by the DMA. In this regard, gatekeepers are given procedural rights,[30] such as the right to be heard and to access judicial review, while the right to freedom to conduct a business of the provider of core business services and their business users are also paid regard to. That being said, the DMA proposal does not set out further obligations for gatekeepers in terms of fundamental rights in contrast to the DSA proposal. This is understandable given that the DMA's main aim is to provide a legal framework ensuring fairness and competition within the digital market not to establish a framework to address the market players as well as the users' fundamental rights.[31] The latter is ensured by the European Convention on Human Rights[32] as well as the General Data Protection Regulation[33], among others. The DMA expressly stipulates that the Act is aligned with these regulations.

Finally, with regard to the DMA's obligations that this paper focuses on, Article 10 should be addressed. Article 10 expressly empowers the Commission to update the obligations set out by Articles 5 and 6, where the need for new obligations to address practices that limit contestability and that are unfair is identified as a result of the market investigation[34] conducted. Along with such regulatory power, the Commission

[28] Recital 61 DMA.

[29] ibid.

[30] Recital 75, art 30, art 25 DMA.

[31] Leistner argues that the legislators' approach to addressing fundamental rights of the parties such as data protection under the broad concept of fairness or contestability is open for discussion. Matthias Leistner, 'The Commission's Vision for Europe's Digital Future: Proposals for the Data Governance Act, the Digital Markets Act and the Digital Services Act – A Critical Primer' (2021) 16 JIPLP 778, 781.

[32] European Convention for the Protection of Human Rights and Fundamental Freedoms, as amended by Protocols Nos. 11 and 14.

[33] Regulation (EU) 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (General Data Protection Regulation) [2016] OJ L119/1.

[34] Art 14 DMA sets out the rules on market investigation.

can also add new types of services and practices as core services (Article 17) as well as designate additional gatekeepers (Article 15) after a market investigation. This is understandable as the DMA centralises the enforcement through the Commission.[35] The Commission is given strong investigative and enforcement powers which allow it to investigate, enforce and monitor the rules set out by the DMA.[36] These powers, along with the aforementioned ones, include assessing gatekeepers' compliance with the rules and imposing appropriate measures on them in case of non-compliance (Article 7); carrying out market investigations to designate a gatekeeper (Article 15); finding out possible systematic non-compliance (Article 16) or finding out if there are new services that need to be included on the list of core platforms services (Article 17). More importantly and as an outcome of these powers, the Commission is empowered to start proceedings as a result of the investigations of non-compliance, etc. While carrying out these proceedings, the Commission would have the power to follow the necessary steps to be able to reach a decision. Hence, it could take on-site inspections, require and collect information from gatekeepers, carry out interviews and adopt interim measures.[37] In case of non-compliance with the obligations set out by Articles 5 and 6, the Commission could impose fines against a gatekeeper.[38] To strike a balance and ensure the protection of the fundamental rights of gatekeepers, it is explicitly made clear by Article 30 that the Commission should ensure that gatekeepers' right to be heard and to have access to the file are respected throughout the enforcement proceedings. Besides, with regard to the Commission's decisions to impose fines and penalties, the Court of Justice of European Union's unlimited jurisdiction to review such decisions is clarified and underlined by Article 35.

The DSA's proposed enforcement mechanism differs from the DMA's centralised enforcement approach. The DSA distributes the enforcement powers as well as the responsibilities through different actors: the DSCs, designated single point of contact (or legal representative, if a provider does not have an establishment in the EU), the board of Member States' digital service coordinators (the board) and the Commission.

[35] For a discussion on the enforcement regimes of the DSA and the DMA through the comparison with the General Data Protection Regulation 2016/679, see Suzanne Vergnolle, 'Enforcement of the DSA and the DMA – What Did We Learn from the GDPR?' in Heiko Richter, Marlene Straub and Erik Tuchtfeld (eds), *To Break Up or Regulate Big Tech? Avenues to Constrain Private Power in the DSA/DMA Package* (2021) Max Planck Institute for Innovation and Competition Research Paper No 21–25, 103 <https://ssrn.com/abstract=3932809> accessed 29 October 2022; Leistner, (n 31) 780–781.

[36] Recital 68 DMA.

[37] Arts 18–21 DMA.

[38] Arts 25–26 DMA.

In contrast to the DMA,[39] the DSA involves Member States in the enforcement process through the DSCs. The DSCs, as competent authorities, are appointed by each Member State.[40] Accordingly, they assume responsibility for coordinating relevant activities at the national level to ensure intermediary services' compliance with the rules in question as well as their consistency and effectiveness.[41] To ensure effectiveness in coordination and communication, the DSA obliges all providers to designate a single point of contact or a legal representative (if a provider does not have an establishment within the EU).[42] Besides the DSCs, there is also the board which is composed of the DSCs. The board's involvement in the process of enforcement of the rules however is limited by advising and assisting both the DSCs and the Commission on certain matters stipulated by Article 47(2) DSA. Finally, in case of the VLOPs' non-compliance with the rules and the decisions to impose fines, the Commission is empowered to carry out the relevant tasks. Similar to the DMA, here the Commission could take on-site inspections, require and collect information from a VLOP, carry out interviews and adopt interim measures.[43] The Commission also imposes fines and enforces penalties on the VLOPs.[44] Throughout the proceedings, the Commission should ensure that the VLOPs' right to be heard and to have access to the file are respected.[45] Besides, the Commission might be referred by the DSCs to assess the matter when a provider of intermediary services infringed the DSA in a manner involving at least three Member States.[46] Taking all these into account, it appears that the DSA's enforcement is to some extent centralised through the DSCs and the Commission depending on the type of the platforms, while other actors appear to have been involved in the enforcement for direct and effective communication and coordination, as they are not provided enforcement powers.

3. Potential compatibility

Finally, the focus shall be turned to the main question of the paper: whether the DSA and the DMA would apply in coherence as they are intended to. The proposed Acts

[39] Member states' involvement within the DMA's enforcement process is limited to the advisory function. Art 32 states that the Commission is assisted by the Digital Markets Advisory Committee which is composed of the representatives of the Member States. Further, art 33 equips the Committee with a right to ask from the Commission to open a market investigation on a certain provider of core platform services that should have been designated as a gatekeeper.

[40] Within two months from the date of entry into force of the Regulation as per art 38(3) DSA.

[41] Arts 38–46 DSA.

[42] Arts 10–11 DSA.

[43] Arts 51–58 DSA.

[44] Arts 59–66 DSA.

[45] Art 63 DSA.

[46] Art 45 DSA.

should indeed complement each other as they focus on different players of the digital world to address different issues. As addressed, the DMA considers gatekeepers which are the providers of core services that fulfil the established quantitative and qualitative criteria. On the other hand, the DSA's focus is on the providers of internet services of different sizes and services. This however does not mean that a service provider could not be subjected to the obligations of the DSA and the DMA at the same time. A VLOP, which is an online platform that has more than 45 million recipients, may also be designated as a gatekeeper if it provides one of the core platform services specified by the DMA.[47] For instance, Amazon as an online marketplace would qualify as a VLOP under the DSA, and as a gatekeeper under the DMA. Accordingly, it would be subject to the obligations established by both Acts which may not be compatible with each other. Thus, the prospects of the possible overlap between the application of the obligations of the DSA and the DMA should be considered here, even though a certain answer could only be given after these rules come into force and are applied by providers of this kind.

The first thing to be taken into account should be the criterion in determining the scope of the asymmetric obligations set out by the DSA and the DMA. Both instruments set the qualitative threshold to classify the platforms and impose the obligations, accordingly. Although the DSA takes the type of service provided into account, it establishes the 45 million monthly user threshold to separate a VLOP from other hosting intermediaries. Likewise, a gatekeeper may be designated based on the quantitative threshold of 45 million monthly recipients. As it is underlined in the proposal of the DMA, the same number (which represents 10% of the European population) is chosen to ensure the consistency as well as the compatibility of both instruments.[48] Given that both Acts establish asymmetric rules to apply according to the sizes of the platforms, the legislators' approach to establishing the same threshold seems appropriate and reasonable to provide consistency. However, when the DMA and the DSA are considered individually in light of their proposed aims, this approach could be criticised. In the case of the DSA, the effectiveness of the 45 million criterion in reaching the principal purpose of tackling online infringements is doubted. Intermediaries would indeed have more resources and infrastructural advantages in tackling infringements as they get larger, but the effectiveness of the rules does not only depend on the size or the resources of the intermediaries. Because the infringing activities do not have territorial limitations, how effectively the rules will be applied in practice cannot easily be predicted. That being said, asking for the establishment of a

[47] Although the quantitative criteria are based on the presumption and can be rebutted by a provider, there is nothing in the DMA suggesting that a provider rebuts the presumption before it is designated as a gatekeeper.

[48] Explanatory Memorandum to the DMA proposal, (n 24) 62.

criterion that would apply to the platforms which do not have an establishment within the EU would not be realistic either as the legislations have territorial limitations. However, the DSA could benefit from the DMA's approach on that point; accordingly, a provision that enables the Commission to review or update the criterion following a market investigation could be included in the DSA.[49]

Furthermore, the Acts' approaches to enforcement should be addressed. It is evident from the above examination that the DSA and the DMA adopt different enforcement approaches. The DMA's enforcement is centralised through the Commission, whereas the DSA distributes enforcement powers through different actors although the DSCs and the Commission are the main ones. The different approaches can be justified under the main purposes of the Acts, however, their coherence might be questionable under some circumstances, for instance, when the Commission steps in for the enforcement of the DSA. As stipulated, although the Commission is not the only competent authority to enforce the DSA, unlike the DMA, the Commission has enhanced supervision powers to be used through the DSCs with regard to the VLOPs. It follows that if a VLOP is also a provider of a core platform service, the Commission would have enforcement powers under the DMA as well as the DSA. As part of the investigative powers that the Commission is granted by the DMA, the Commission could take on-site inspections, require and collect information from a gatekeeper or carry out interviews. It is however not clear whether the information collected as a result of these could be used for the DSA investigations.[50] As the Commission has capacity under both Acts, this question can also be asked vice versa. It should be further underlined that the Commission should have different expertise and appropriate competency in applying its powers by means of enforcement, although it is granted similar sorts of powers by the DSA and the DMA.[51]

[49] Eifert and others also propose that the criteria should be applied at national level, not the EU level. It is argued that vulnerable groups would be more effectively identified in smaller spheres of communications, so that the large platforms should be specified based on smaller territories such as one or two member states. Eifert and others (n 22) 998. Janal argues that the 45 million users threshold is too high, since only four Member States have a population larger than 45 million. Ruth Janal, 'Eyes Wide Open' in Heiko Richter, Marlene Straub and Erik Tuchtfeld (eds), *To Break Up or Regulate Big Tech? Avenues to Constrain Private Power in the DSA/DMA Package* (2021) Max Planck Institute for Innovation and Competition Research Paper No 21-25, 62, 63 <https://ssrn.com/abstract=3932809> accessed 29 October 2022.

[50] Alexandre de Streel and Pierre Larouche, 'The European Digital Markets Act Proposal: How to Improve a Regulatory Revolution' (2021) University of Montreal Faculty of Law Research Paper Concurrences No 2-100432 46, 48.

[51] Commission, 'Staff Working Document, Impact Assessment Accompanying the Document Proposal for a Regulation of the European Parliament and of the Council on Contestable and Fair Markets in the Digital Sector (Digital Markets Act)' SWD(2020) 364 final, paras 410-412.

Finally, the obligations on transparency should be considered. By imposing asymmetric and rather stringent transparency duties, both Acts aim for the same: to mitigate the unbalanced positions of different parties in the digital world in reaching, using as well as controlling the information. Indeed, as assessed, the DSA establishes different transparency obligations on online advertising, recommender systems as well as content moderation activities of digital platforms to ensure transparency in the relationship between the platforms and their users. Likewise, the DMA's transparency rules are aimed at promoting transparency within the relationships between end users, advertisers and business users with gatekeepers. Thus, although these two legislative initiatives address different risks and problems of the digital world, they both bring rules to control digital platforms' acquired power within the digital world and to align parties' abilities and powers. In this regard, the two Acts' transparency obligations appear to complement each other. The similar nature of transparency obligations may work in favour of the platforms which are both subject to the DMA and the DSA, as well. For instance, when a platform is obliged to provide information on the advertising services or the parameters and algorithms used in providing these services, the same report containing corresponding information could fulfil the obligations imposed by both Acts.

As a very last point, it should be stated that both Acts should be aligned with the European Convention on Human Rights, due to its binding nature, therefore they should complement each other in practice in ensuring the protection of fundamental rights within the digital world, although their effectiveness in protecting fundamental rights individually may be questioned.[52]

4. Concluding remarks

The goal of this paper has been to examine the interplay between the two main legislative initiatives of the Digital Services Package, namely the DSA and the DMA proposals, since they are proposed to complement each other. The DMA's focus is on gatekeeper online platforms that are considered to have a major economic and societal impact on the market. Their entrenched and durable position within the digital market is proposed to be changed by the imposition of horizontally applicable ex-ante obligations as these are aimed to iron out the unfair practices, ensure compatibility and create a level playing digital environment for all. The DSA, on the other hand, focuses on providers of different sizes and services, namely internet intermediaries, hosting intermediaries, online platforms and the VLOPs. It is proposed to update the current law on intermediaries' liability. As demonstrated, this is done by establishing new sets of

[52] ibid, para 362.

horizontally applicable rules, in addition to the current rules on immunity that are essentially reproduced by the DSA. The DSA's objective is to tackle online infringements and protect fundamental rights. As far as their objectives are concerned, the Acts should complement each other as they are intended to.

In fact, as the above examination has shown, the legislators adopted similar approaches to deal with different issues and to fulfil different aims. First of all, both proposals reflect the change in the approach adopted by the European legislator in tackling online issues.[53] The proposed frameworks are based on the prevailing idea of acknowledging digital platforms' responsibility within the digital world. Accordingly, tiered obligations are imposed on them according to their sizes and economic or societal impact to create a safer and more open digital space. In doing so, both Acts set out the same quantitative criterion to distinguish platforms from each other, and then impose asymmetric obligations on them. By virtue of that, an online platform that has more than 45 million recipients within the EU is considered a VLOP, whereas a provider of a core platform service that has more than 45 million end users within the EU is designated a gatekeeper. This approach seemingly ensures consistency and compatibility, although the convenience of the chosen number is open for discussion.

Likewise, the transparency obligations set out by the DSA and the DMA appear to be complementing each other, although they tackle different risks and problems of the digital world. These asymmetric obligations are set out for fulfilling the same purpose: to mitigate the unbalanced positions of different parties in the digital world in reaching, using as well as controlling the information. Besides, the transparency obligations of the DSA and the DMA may overlap in certain cases. The DSA imposes transparency obligations on the VLOPs concerning their online advertising activities and a VLOP could also be subjected to transparency obligations of the same sort under the DMA when it qualifies as a gatekeeper. However, these obligations do not appear to conflict with each other.

That being said, the paper has shown that further attention should be paid by the legislator to at least one matter. In terms of enforcement, the Commission would be the competent authority to investigate the platform's compliance with the DSA and the DMA when a VLOP is designated as a gatekeeper as well. However, the proposals overlooked the possible question that might be raised while the Commission performs its investigative and enforcement powers: Could the information collected by the Commission as a result of these investigations be used for the investigations conducted

[53] Luciano Floridi, 'The End of an Era: From Self-Regulation to Hard Law for the Digital Industry' (2021) 34 Philosophy & Technology, 619; Giancarlo Frosio, 'Regulatory Shift in State Intervention: From Intermediary Liability to Responsibility' in Edoardo Celeste, Amélie Heldt and Clara Iglesias Keller (eds), *Constitutionalising Social Media* (Hart Publishing, 2022) 154-155.

under the other Act? If yes, to what extent the collected information could be used? It is evident that the legislators should address this question before the proposals are finalised and come into force.

In light of these findings, it can be concluded that the DSA and the DMA appear to complement each other as far as their objectives are concerned. As these are aimed to tackle different but substantial issues of the digital world, they should work complementarily in reaching the legislators' ultimate purpose of establishing a safer, more open and fairer digital sphere. That being said, whether these two would apply in coherence could only be answered conclusively after these rules have come into force and are applied in practice. The paper has shown that there are still some issues that need to be addressed despite the appearing compatibility. Therefore, how the analysed Acts will be applied together in practice remains to be seen.

Frédéric Marty [*] ***- Jeanne Mouton*** [**]

ECOSYSTEMS AS QUASI-ESSENTIAL FACILITIES: SHOULD WE IMPOSE PLATFORM NEUTRALITY?

Abstract
The Google Shopping judgment raises the question of the possibility of attributing some of the characteristics of essential facilities to specific digital infrastructures and services. Such characteristics could lead to imposing access and neutrality obligations on digital 'gatekeepers' for the benefit of business partners, which may compete with some of their activities. This contribution examines the legitimacy and effectiveness of such injunctions. The aim is to examine successively the necessary scope of such obligations by questioning the place of the criterion of the indispensability of access, to consider the limits of such kind of asymmetrical regulation of competition, and to consider the possibility of addressing them through structural remedies.

JEL CLASSIFICATION: L13, L42, L50

SUMMARY

1 Introduction

On November 10th, 2021, the General Court, has assimilated, in its Google Shopping judgement, the Google search engine to a quasi-essential facility. [1] In such case the Commission does not have to demonstrate the indispensability of the access. Therefore, impairing access would be part of an anti-competitive exclusionary strategy if no objective justification is provided.

The press release of the Court of Justice of the EU explicitly brought the situation of Google Search closer to that of an essential facility. Two conclusions can be drawn. First

[*] CNRS – GREDEG – Université Côte d'Azur; OFCE, Sciences Po, Paris; CIRANO, Montréal.
[**] College of Europe, Bruges; CNRS – GREDEG – Université Côte d'Azur.

[1] Case T-612/17 *Google and Alphabet v Commission (Google Shopping)* [2021].

a distortion of access would be anti-competitive in nature. Second, a company has a particular responsibility to ensure that its commercial partners have access to an unbiased indexation. However, and significatively, it did not use the qualification of essential facility but noted that the search engine had characteristics that made it similar to this in terms of its critical place for Internet users in the matter of access to information on the web. This crucial operator character in the words of Marie-Anne Frison-Roche[2] makes it possible to bypass the condition of indispensability of the service as defined as necessary for the activation of the essential facilities theory in the Bronner judgment.[3]

> "[...] The general results page has characteristics akin to those of an essential facility in as much as there is currently no actual or potential substitute available that would enable it to be replaced in an economically viable manner on the market. However, the General Court confirms that not every practice relating to access to such a facility necessarily means that it must be assessed in the light of the conditions applicable to the refusal to supply set out in the judgment in Bronner, on which Google relied in support of its arguments. In that context, the General Court considers that the practice at issue is based not on a refusal to supply but on a difference in treatment by Google for the sole benefit of its own comparison service, and therefore that the judgment in Bronner is not applicable in this case".[4]

This is not a case-by-case market practice assessment based on the effects; it is hardly a case of activation of the essential facilities doctrine (refusal to contract). As a matter of fact, it is case of sanctioning, through the characterisation of a foreclosure, distortions introduced in the access of third parties to an infrastructure to which they previously had free access and equal treatment.

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[2] Marie-Anne Frison-Roche, 'Proposition pour une notion: l'opérateur crucial' (2006) 07 Recueil Dalloz 1896.

[3] Case C-7/97 Oscar Bronner GmbH & Co. KG v Mediaprint Zeitung (Bronner) [1998].
"§41 : [...] not only that the refusal of the service comprised in home delivery be likely to eliminate all competition in the daily newspaper market on the part of the person requesting the service and that such refusal be incapable of being objectively justified, but also that the service in itself be indispensable to carrying on that person's business, inasmuch as there is no actual or potential substitute in existence for that home-delivery scheme."
"§45 It should be emphasised in that respect that, in order to demonstrate that the creation of such a system is not a realistic potential alternative and that access to the existing system is therefore indispensable, it is not enough to argue that it is not economically viable by reason of the small circulation of the daily newspaper or newspapers to be distributed."

[4] General Court of the European Union, 'The General Court largely dismisses Google's action against the decision of the Commission finding that Google abused its dominant position by favouring its own comparison-shopping service over competing comparison shopping services' (2021) <https://curia.europa.eu/jcms/upload/docs/application/pdf/2021-11/cp210197en.pdf> accessed 13 October 2022.

The purpose of this article is to shed light on the concept of quasi-essential facility which is underlying to the EU General Court judgement and to draw some lessons from it as regards to the competitive treatment of practices by dominant operators. These practices could be seen as a progressive reduction of access to some of their infrastructures leading, if not to an absolute closure, at least to a relative one. An absolute closure, according to the logic of the Commission's February 2009 Communication,[5] corresponds to a refusal of access. A relative closure may take the form of access under degraded and discriminatory conditions,[6] so that, for example, an as efficient competitor would not be able to provide a service of equivalent quality or would be subject to obstacles that would not allow it to compete on level playing field.

However, two specificities of our case must be highlighted.

A first specificity is the change in access policy. This policy, which was initially based on non-discriminatory opening, no longer guarantees a level playing field between user companies. The downstream activity of the vertically integrated company now enjoys a competitive advantage over its competitors active on the downstream market alone. The economic question may then be that of self-preference. The theory of damage may come down to discrimination, the anti-competitive nature of which would have to be demonstrated. This character can be classically assessed through the evaluation of the net effect of the practice or through alternative economic tests, the relevance of which can be discussed in the framework of the more economic approach.

A first test could be the absence of economic sense. Does the change in strategy make sense from a profit maximisation perspective or does it have no other explanation than to hinder competitors? In ordoliberal terms, it would be a matter of sanctioning a practice that is an impediment to competition and not a performance competition on the part of a dominant operator. A company could then be sanctioned if it implements a strategy aimed at increasing rivals' costs or degrading their performance without objective justification. In this context, the consumer could not *a priori* benefit from the practice. It would then logically be up to the presumed infringing company to show that its change of attitude is necessary to achieve efficiency gains, does not lead to the elimination of all competition and that a fair share of the gains would be passed on to the consumer.

[5] Communication from the Commission – Guidance on the Commission's enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings [2009] OJ C 45

[6] ibid §79 "Likewise, it is not necessary for there to be actual refusal on the part of a dominant undertaking; 'constructive refusal' is sufficient. Constructive refusal could, for example, take the form of unduly delaying or otherwise degrading the supply of the product or involve the imposition of unreasonable conditions in return for the supply".

A second test could be the sacrifice test. If the firm foregoes a profit, it would be engaged in some form of predatory strategy.[7] The risk of a false positive is then significant since the purpose of the competitive incentive is to provide all the necessary incentives to pass on efficiency gains to consumers. Furthermore, in the digital sector, the two-sided nature of business models, the strategy of scale and the desire to amplify network effects in an ecosystem can explain strategies that do not maximise profit at every moment in every market.[8]

An example of a strategy of foregoing a profitable transaction can be found in a precedent in US case law based on a comparable theory of harm: Aspen Skiing (Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585 (1985)).[9] Indeed, the damage theory developed by the EU General Court is not completely new. The 1985 US Supreme Court judgment in Aspen Skiing followed a very similar logic. First, it concerned a facility that could not be described as essential. The access requested concerned the possibility of commercialising multi-domain ski passes. Similarly, this possibility already existed and had just been abolished. Access to the market of competitors (a neighbouring ski area in this case) which had been facilitated in the first period, is hindered in a second period, the manager of the main ski areas not being able to provide an objective justification. The Supreme Court has developed in Aspen a demonstration echoing the ordoliberal distinction between performance competition and impediment competition. Indeed, the Court states that "the evidence supports an inference that Ski Co. was not motivated by efficiency concerns" (§ 610). But conversely a change in a market strategy "does not violate Section 2 if valid business reasons exist for that refusal" (§ 605). In the case of Shopping, however, the issue is specific since the firm that worsens the conditions of access of competing firms does not forego a profit but increases it. There is therefore no sacrifice.

A second specificity relates to the ability or lack of ability of downstream firms to respond to the change in strategy of the vertically integrated firm. Should the destabilisation of downstream partners and competitors be treated as an abuse of economic dependence which exists in the domestic competition laws of certain Member States? Should we go so far as to consider that certain platforms have the characteristics of essential quasi-facilities in relation to which there are no realistic

[7] In the Communication from the Commission (n 5), sacrifice is defined in §64 to 66. In §65 “In order to show a predatory strategy, the Commission may also investigate whether the allegedly predatory conduct led in the short term to net revenues lower than could have been expected from a reasonable alternative conduct, that is to say, whether the dominant undertaking incurred a loss that it could have avoided”.

[8] Jean-Charles Rochet and Jean Tirole, ‘Platform Competition in Two-Sided Markets’ (2003) 1 Journal of the European Economic Association 990.

[9] Marina Lao, ‘Aspen Skiing and Trinko: Antitrust Intent and Sacrifice’ (2005) 73 Antitrust LJ 171; “Aspen, however, held that a monopolist’s refusal to deal with rivals may violate Section 2 if the monopolist lacks legitimate competitive reasons or the refusal” (p. 171).

alternatives from a technical and financial point of view for the companies using their services? If so, should these infrastructures be subject to an indispensability test such as that set out in the Bronner case law? If an infrastructure is so qualified, any company must be able to access it under reasonable and non-discriminatory technical and tariff conditions. In other words, the management of the infrastructure must meet neutrality requirements.

Such an obligation could be imposed on online intermediation platforms if they have evolved to a situation of ultra-dominance or if their customers have opted for single homing. Then, there is no alternative to access a given digital ecosystem even if it is not dominant in the sense of competition law. We should nevertheless consider the risk to shift from an essential facility logic to a convenient facility logic.[10] Access would be given to a competitor to enable it to compete more effectively and less expensively with a vertically integrated operator on the downstream market. This amounts to coercing the dominant company to the benefit of its competitors and could come under the heading of asymmetric regulation of competition.

This approach is not new in the history of competition law. In the United States, the Alcoa decision of 1945[11] required the vertically integrated company to leave a living profit for its competitors on the downstream market.[12] The aim was not to ensure that the pricing practice did not drive out a competitor that was as efficient as the vertically integrated company, but to impose on the latter a pricing strategy that would enable it to keep its competitors on the market. Such reasoning also implicitly involves a trade-off between consumer welfare and competitor welfare if an effects-based approach is adopted. However, aiming to constrain the behaviour of the dominant vertically integrated operator can also be defended if one considers that the consumer gains from maintaining effective rivalry on the downstream market (in terms of freedom of choice, diversity of potential innovation paths, etc.) or that the foreclosure of competitors could lead to a vertical extension of the dominant position which could be irreversible.

For all these reasons, neutrality requirements are particularly relevant for digital platforms. They could extend beyond the usual scope of essential facilities. The Digital

[10] Derek Ridyard, 'Compulsory Access under EU Competition Law: a New Doctrine of "Convenient Facilities" and the Case for Price Regulation' (2004) 11 European Competition Law Review 669; Analysing the EU Commission decision in Microsoft, Ridyard denounces a "move towards a new "convenient facilities doctrine" (an asset without access to which it would be jolly inconvenient for rivals because they would need to offer customers a better product in order to overcome the advantages of the incumbent" (p. 670).

[11] *United States v. Aluminum Co. of America* [1945] US Court of Appeals for the Second Circuit 148 F.2d 416 [1945].

[12] John B Meisel, 'The Law and Economics of Margin Squeezes in the US versus the EU" (2012) 8 European Competition Journal 383.

Market Act (DMA)[13] and the Digital Market Act (DSA)[14] impose specific and asymmetrical obligations on companies that are qualified as gatekeepers or considered as systemic platforms. Their margins of freedom in relation to third-party companies using their services are reduced without a balance of effects being required to sanction them in the event of failure to comply with the rules laid down. The logic is therefore less that of applying competition rules than of regulating the said competition. Insofar as digital markets are more likely than others to tip over into situations of lasting dominance and that the conditions of competition can be altered by the dominant company which plays the role of private regulator of its ecosystem, competition can prove to be unfair if not inequitable. It is then a question of correcting, through regulation, these competitive risks which result less from a 'natural monopoly', as would be the case in the theory of essential facilities, than from a 'market failure' in certain digital ecosystems.[15]

Several questions then remain. First, should a right of access to a platform be guaranteed to companies that are 'dependent' on it, even if it does not meet the indispensability criteria? Second, should the burden of proof be reversed when a dominant company unilaterally changes its strategy to the detriment of its complementors? Thirdly, when examining self-preferencing practices, should the protection of the competitors and of the market structure be one of the aims of competition law? Fourthly, should platform neutrality be imposed, possibly to the detriment of consumers, by prohibiting per se self-referencing practices for example? Fifthly, in order to avoid the costs and limits of intrusive regulation of behaviour, should we go as far as structurally separating the activities of platforms and service providers, i.e. dismantling platforms that play a dual role?

The article is structured in three sections.

The first section presents the theory of damage involved in Google Shopping as interpreted by the Court. It shows how the progressive closure of access to a quasi-essential facility could be read as an exclusionary abuse.

A second section analyses the practice sanctioned from an economic analysis perspective.

Our third section discusses three questions arising from the EU General Court ruling in the light of industrial organisation insights: what could be the impact of a requirement of equal treatment such as it could result from the Court's judgment?

[13] European Parliament and European Council (EU) 2022/1925 on contestable and fair markets in the digital sector (Digital Markets Act) [2022] *OJ L 265*.

[14] European Parliament and European Council Proposal for a Regulation on a Single Market for Digital Services (Digital Services Act) [2020] COM/2020/825 final.

[15] Specific to the inner dynamics of digital ecosystems prone to tipping tendencies. See Nicolas Petit, 'Big Tech & the Digital Economy – The Molygopoly Scenario' (Oxford University Press 2020).

2 Shopping, between a constructive refusal of access of quasi-essential facilities and a strategic second-phase discrimination

In November 2010, the EU Commission, following complaints by search service providers, opened an antitrust investigation into allegations that Google had abused his dominant position in the online search market.[16] Seven years after opening formal proceedings and an unsuccessful commitments procedure, the EU Commission issued a prohibition decision fining Google 2.42 billion euros for abusing dominance with his search engine by giving illegal advantage to his own comparison service. Bostoen qualifies the EU Commission decision "at best ambiguous" relatively to the legal qualification of the abuse, "given it oscillated between leveraging and favouring".[17] The author further qualifies leveraging as an "umbrella" term that may include different forms of abuses, including refusal to supply.

Google appealed the decision of the Commission and raised six pleas to this aim.[18] In his decision of November 10th, 2021, T-612/17, the EU General Court dismissed Google's appeal and confirmed the finding from the EU Commission decision that the search engine abused its dominant position by favouring its own comparison-shopping service over competing comparison-shopping services.

If Google did not dispute the fact that it holds a dominant position on the 13 national markets at the core of the proceedings (§119), the legal qualification of the abuse was trickier. From the theory of harm of favouring, leveraging, discrimination or refusal to supply, the decision of the EU General Court judgment brings clarification on the abusive practices.

First and foremost, attention should be paid to the evolution of Google's strategy, from an initial opening that was perceived as normal relatively to his business model to a discrimination in the access of the service. This "open early, close late" strategy in digital markets has been reviewed by the economics literature[19] and the economics of open and closed systems were the subject of a joint report from the Competition and Markets Authority and the French Autorité de la concurrence.[20] In the first stage, the platform needs to reach a critical mass of users, both to compensate for the service

[16] European Commission, 'Antitrust: Commission probes allegations of antitrust violations by Google' (2010).

[17] Friso Bostoen, 'The General Court's Google Shopping Judgment Finetuning the Legal Qualifications and Tests for Platform Abuse' [2022] 13 Journal of European Competition Law & Practice 75.

[18] All the six pleas were summarized in Natalia Moreno Belloso, 'Google v Commission (Google Shopping): A case summary' [2021] <Google v Commission (Google Shopping): A Case Summary by Natalia Moreno Belloso>, available at SSRN, accessed on 24 November 2022.

[19] Bruno Jullien and Wilfried Sand-Zantman, 'The economics of platforms: A theory guide for competition policy' [2021] 54 Information Economics and Policy.

[20] UK Competition and Markets Authority and French Autorité de la concurrence 'The Economics of open and closed systems' (2014).

being free of charge in one side of the market and to gain in credibility and attract businesses on the other side.[21] The judgment from the General Court points out an "abnormality" in Google's favouring his own specialised results over third-party results, as it "seems to be the converse of the economic model underpinning the initial success of its search engine" (§179). Then question arises as to whether the deviation in Google's behaviour, this second stage closing strategy, constitutes competition on the merits or not on a market where it acquired a 'super-dominant position'. This change of behaviour had the double effect of a decrease in the visibility from his competing CSS and an increase in the visibility of results from Google's own CSS.[22] Moreover, if the users and the businesses were attracted on the market due to the first "open" stage of the strategy, they were then secured because of the market power of Google which made switching nearly impossible. In deviating from the usual practices on the market, Google is infringing his particular responsibility as a dominating operator.

While considered as an 'abnormal' behaviour, Google contested that the Commission did not meet the indispensability criterion set by the Bronner judgement in characterizing a refusal to supply, which states that the access to the service must be indispensable for carrying a business on a market where there is no actual or potential substitute. The Commission does not explicitly refer to a refusal to supply, but only to a favouring abuse, which is acknowledged by Google since they plead that "It is irrelevant that the decision used a different form of words to punish a refusal to supply" (§200). Their plea followed a backward reasoning, according to which the Commission should have met all the criteria of a refusal to supply to impose a duty to supply as a remedy. The General Court dismissed their reasoning as "there can be no automatic link between the criteria for the legal classification of the abuse and the corrective measures enabling it to be remedied" (§244).

Nevertheless, Google favouring his own specialised results over third-party results, which resulted in an abuse, was only possible because his search engine characteristics

[21] Case T-612/17, *Google and Alphabet v Commission (Google Shopping)* [2021] §178 "Unlike the latter infrastructures, the rationale and value of a general search engine lie in its capacity to be open to results from external (third-party) sources and to display these multiple and diverse sources on its general results pages, sources which enrich and enhance the credibility of the search engine as far as the general public is concerned, and enable it to benefit from the network effects and economies of scale that are essential for its development and its subsistence in a market in which, by their very nature, few infrastructures of that kind can subsist, given those network effects. A very large number of users is needed to reach the critical mass capable of compensating for the service being free of charge on one side of the market and generating advertising income on its other side. Accordingly, for a search engine, limiting the scope of its results to its own entails an element of risk and is not necessarily rational, save in a situation, as in the present case, where the dominance and barriers to entry are such that no market entry within a sufficiently short period of time is possible in response to that limitation of internet users' choice."

[22] Case T-612/17, *Google and Alphabet v Commission (Google Shopping)* [2021]. First part of the first plead in law "the Commission did not prove that the practices at issue had led to a decrease in traffic from Google's general results pages to competing comparison shopping services", rejected by the Court. Second part of the first please in law: "the Commission did not prove that the practices at issue had led to an increase in traffic from Google's general results pages to its own comparison-shopping service", rejected by the Court.

were akin to an essential facility, in the sense that there is no "economically viable" (§224) substitute. While the indispensability criterion could not be met by the Commission, since *there are alternatives available*, Google's general results pages accounted for such a proportion of the traffic that "could not be replaced by other sources of traffic currently available". Indeed, the Commission describe the traffic from other general search services as "insignificant and unlikely to increase" (§226) due to the high barriers to entry characterizing the market for general search services.

Furthermore, even if all the criteria of an essential facility were met, the question of the refusal is still pending. Google did not refuse the access to its search engine, instead, the company changed its strategy by imposing discriminating access which resulted in a distortion of competition. The refusal to supply is strictly framed in the 2009 communication from the EU Commission which provides guidance on the application of the former art 82 to abusive exclusionary conduct.[23] The Commission starts by reminding the aim to protect the right for any undertaking to choose its trading partners to avoid undermining the companies' incentives to invest and innovate. This disclaimer from the Commission aside, the communication distinguishes between actual refusal on the part of the dominant undertaking and a "constructive refusal" which is deemed sufficient to characterise the abuse. The concept of "constructive refusal" is illustrated by degrading the supply of the product, which could be linked to Google's behaviour. While not expressly refusing the access, the discrimination in the access to Google's favour was a degradation of the supply of the service, which has an eviction effect on the upstream neighbouring market and so a leveraging of the dominant position from downstream to the upstream market.

There are previous examples in case law where the indispensability criterion was not met. From the US side, this is the Trinko case[24] and from the EU side, the Microsoft case.[25] Geradin discusses what EU competition lawyers can learn from the Trinko case, taking the Microsoft case among others as an example.[26] In the Microsoft case, the company was fined in 2004 for abusing its dominant position by leveraging its dominance position in the PC operating systems to the work group servers market. Two

[23] Communication from the Commission (n 5).

[24] Verizon Communications Inc. V. Law Office of Curtis V. Trinko, LLP [2004] US Supreme Court (02-682) 540 U.S. 398. In the frame of a class action lawsuit, Trinko claimed that the harm resulted from an inferior access to a telecom infrastructure provided by an incumbent local exchange carriers. The conduct was also infringing the 1996 Act with impose incumbent local exchange carriers to provide competitors the access to their local telecommunications network. The Supreme Court dismissed the claim for failure to state an antitrust claim and stressed that the benefit of a judicial antitrust claim should be weighed against its costs when there already a regulation.

[25] Case COMP/C-3/37.792 *Microsoft* [2004].

[26] Damien Geradin, 'Limiting the scope of Article 82 EC: What Can the EU Learn from the US Supreme Court's Judgment in Trinko in the wake of Microsoft, IMS and Deutsche Telekom?' (2004) 41 Common Market Law Review 1535.

types of abuses were addressed in the decision from the EU Commission, among which the refusal to share by Microsoft an interoperability information with his competitors which was needed to compete against the dominant company in the work group server market. The Microsoft case shares several similarities with the Google's case, notably the strategy of first granting access to information to other firms and then withdrawing the previously shared information. Then, there is also the tricky indispensability criteria, which was "overlooked" by the Commission according to Geradin. The reason underlying this is probably because the competitors were already on the market before and needed to access the interoperability information to merely be able to continue to compete. There again, a parallel can be drawn with the Google case. Nevertheless, Microsoft was fined for leveraging and not for a refusal to deal.

At the end, the main issue stands in the alternatives available and whether the indispensability criterion excludes any. It would be tempting to frame the alternatives and only sustain the indispensability criterion when they cannot perfectly substitute for the quasi-essential facility. However, this analysis might be risky and drifting into convenient facilities. On the other hand, how to ensure equal treatment of competitors when the business strategy from the dominant firm is non-replicable because his business is vertically integrated and his service quasi-essential on the market? This calls for a discussion on the legal and economic analysis of such practices.

3 Allowing for convenient facilities or banning self-preferencing: protecting competition or competitors?

A parallel could be drawn between essential facilities[27] and the economics of innovation and intellectual properties when assessing the economic risks associated with convenient facilities. In the 2009 communication from the Commission,[28] the very first sentence under the section "refusal to supply" set the position from the Commission that "any undertaking, whether dominant or not, should have the right to choose its trading partners and to dispose freely of its property" (§75). In the same paragraph the Commission identifies the risks of an obligation to supply, such as a decrease in the incentives for the firm to invest and innovate as they would anticipate that competitors may free ride their efforts. Additionally, an obligation to supply could also result in harming consumers who would not benefit from the investment nor innovation effort from the market players. Therefore, it is with "careful consideration" that the Commission would assess a refusal to supply. This necessity to protect

[27] On the application of the essential facilities doctrine to the EU digital markets; see Inge Graef, 'Rethinking the Essential Facilities Doctrine for the EU Digital Economy' (2019) 53 Revue Juridique Thémis de l'Université de Montréal.

[28] Communication from the Commission (n 5).

innovation and investment was at the core of every essential facilities case, both from the EU and transatlantic side. From the EU Competition law side, the restrictive Bronner case law set up the three conditions to grant access to an input: the refusal is likely to eliminate all competition on the market, the refusal cannot be objectively justified, and the input is indispensable.

Back to our benchmark, innovation and intellectual property policies also have for goals to protect the innovation efforts and investments from the firms in the market. Among the legal and economics instruments to incentivise firms to innovate, there is the patent system, which allows the firms to benefit from a monopoly profit over their innovation during a limited period. Thereof, any policy of innovation balances between consenting market power, to incentivise firms to innovate, and avoiding consenting too much market power for the social optimum, which would be an access for all consumers to the innovation at a competitive market price. In comparison with the theory of essential facilities, firms must have the opportunity to gain market power on the merits, as a return for their innovation and investment efforts. It seems relevant here to remind that the firms have a right to become dominant if they achieve this dominant position competing on the merits. In a parallel reasoning, the market players have incentives to produce innovation and investment efforts because they received the signal from the EU case law that essential facilities are strictly framed. If the indispensability criteria were to be completely removed from the Bronner case law, the risks would be higher for the firms to face refusal to deal or to access case law. This situation would create legal uncertainties decrease their innovation and investment efforts, harming both all the market players and the consumers.

An alternative solution would be to sustain the indispensability criteria, but as a less restrictive criteria, with the assessment of the alternatives. Indeed, in the Google Shopping case, it is clear from the Court decision that there are alternatives available, but they cannot replace the traffic generated by Google. Hence, an evolution of the case law, that would protect the economic incentives for the market players could consist in, on a case-by-case analysis, verifying that the alternatives could perform as substitute, and if not, in practice, the service or product would be indispensable. The burden of this assessment could lie on the platform which benefit from an informational advantage.[29]

[29] It is not a foregone conclusion under EU Competition law, it which it is up to the Commission to establish the damage. See T-604/18, *Google and Alphabet v Commission (Google Android)* [2022], §79 "In particular, where the Commission finds an infringement of the competition rules on the basis that the facts established cannot be explained other than by the existence of anticompetitive behaviour, the Court will find it necessary to annul the decision in question if the undertaking concerned puts forward arguments which cast the facts established by the Commission in a different light and which thus allow another plausible explanation of the facts to be substituted for the one adopted by the Commission in concluding that there has been an infringement."

The debate on "how indispensable is the indispensability criterion" was also tackled as regards to the Slovak Telecom case,[30] which shared some similarities with the Google Shopping case. Indeed, the dominant company was supplying input (data) to its competitors and then withheld the necessary network information from its alternative operators for the unbundling of the local loop. The access to the data was not refused but degraded, in the sense of a "constructive refusal to supply" as provided in the 2009 communication from the Commission. The EU Court of Justice took the opportunity to clarify that the indispensability criterion is not by itself decisive when it comes to other abusive practices than a refusal to supply (§50 of the decision). Which confirms the intention from the EU case law to limit refusal to supply while allowing for other competitive theories of harm.

Since the evolution of the case law on essential facilities seems very unlikely, Google's strategy of a first opening and then close access to his service could be assessed under the self-preferencing theory of competitive harm.[31]

The *Google Shopping* case gave rise to a wide literature on the self-preferencing theory of competitive harm and question whether article 102 TFUE establishes a duty for dominant undertaking to not favour their own products over the offering from their competitors. Ultimately, both legal and economics scholars, address how to analyse economically and qualify legally a situation in which, after an initial phase of openness to competitors, a platform with a dual role gradually closes down not by refusing access but by possibly degrading the access.

First, the application of the Bronner criteria to the self-preferencing practices in the on-going Google case was rejected by Vesterdorf. The former president of the Court of first instance of the EU bases its reasoning both on the right for dominant undertakings to compete on the merits, stressing the aims of Art.102 to protect competition and not competitors, and on the very limited circumstances under which a product or a service was characterized as an essential facility.[32] Petit challenges the former legal analysis, which he founds "disconcerting" because restrictive to the essential facilities theory only, while there is an alternative legal basis under EU competition law to tackle self-

[30] Jose Rivas, 'How indispensable is the indispensability criterion in cases of refusal to supply competitors by Dominant Companies? (Slovak Telekom, C-165/19 P) [2021] <How Indispensable is the Indispensability Criterion in Cases of Refusal to Supply Competitors by Dominant Companies? (Slovak Telekom, C-165/19 P) - Kluwer Competition Law Blog> accessed on 4 Oct. 2022.

[31] The closing strategy here takes a relative but not absolute form. It proceeds from an opaque demoting. A parallel could be drawn with the "theoretical" openness of Android - everyone can access the code (open source) but access to essential functionalities (the Play Store) is conditional on the eventual fork being validated by Google. This amounts to discriminating between users and leaving alive those who do not threaten the market position. See Simonetta Vezzoso, 'Android and Forking Restrictions: On the Hidden Closedness of 'Open'' (2018) 2 Market and Competition Law Review 17.

[32] Bo Vesterdorf, 'Theories of self-preferencing and duty to deal-two sides of the same coin?' (2015) 1 Competition Law & Policy Debate 4-9.

preferencing such as tying, discrimination or unfair pricing.[33] Ibáñez Colomo questions the underlying legal issues associated with the use of 'self-preferencing' as a label, which would capture several types of anticompetitive practices under existing legal qualifications. He also stresses the role of competition law to incentivise better products or services, in the broader question that was raised, which is whether the competitive advantage that results from integration, horizontal or vertical, is a legitimate one.[34] Padilla and others analyse under which circumstances a vertically integrated gatekeeper platform is incentivized to abuse his dominant position via self-preferencing. The authors built a two-period model in which the gatekeeper has the option during the second period to privilege its own product instead of third-party sellers on his platform. They found that the incentive for the gatekeeper to abuse its dominant position is related to the evolution of demand for the devices sold.[35] Bougette and others also review how and under which incentives a platform may implement self-preferencing practices and whether it can take the form of an exploitative or an exclusionary abuse. They also review the literature that distinguishes between self-preferencing practices that are welfare decreasing or welfare enhancing, the former relying on more ambitious presumptions.[36]

Acknowledging that under certain conditions self-preferencing can be welfare enhancing for the consumers, the question remains whether a distinction between the welfare effects of self-preferencing practices can be translated into EU Competition law. The conclusions from AG Rantos in a reference for a preliminary ruling in the *Servizio elettrico Nazionale* case provide guidance as regard to the situation in which competitors are injured but where there is a possibility of positive effects for the consumers.[37] To his opinion, AG Rantos assesses that the preservation of the competitive structure cannot constitute an autonomous objective that would be an alternative to consumer well-being. Supported by the Court case law, the AG Rantos adds that "preserving an effective competition structure is intrinsically linked to an ultimate purpose, namely consumer protection" (§96). The AG rejects the antinomic interpretation of these two objectives from the referring court.

Following the conclusions from the AG that the protection of consumer well-being, and not the protection of a certain market structure is "the ultimate aim" (§106), one

[33] Nicolas Petit 'Theories of self-preferencing under Article 102 TFEU: A reply to Bo Vesterdorf' (2015) Competition Law & Policy Debate.

[34] Pablo Ibanez Colomo, 'Self-Preferencing: Yet Another Epithet in Need of Limiting Principles', (2020) 43 World Competition.

[35] Jorge Padilla, Joe Perkins, and Salvatore Piccolo, 'Self-Preferencing in Markets with Vertically Integrated Gatekeeper Platforms' (2022) 70 The Journal of Industrial Economics 371.

[36] Patrice Bougette, Olivier Budzinski, and Frédéric Marty 'Self-Preferencing and Competitive Damages: a Focus on Exploitative Abuses' (2022) The Antitrust Bulletin.

[37] Case C-377/20 Servizio Elettrico Nazionale and Others [2021] Opinion of AG Rantos.

could imagine that self-preferencing in the context of vertically integrated firm with pro-efficient justifications would not be sanctioned by EU Competition law. It is not the object of the two-phase strategy of first opening then closing the access that would be sanctioned, but its anticompetitive effects. The following reasoning is confirmed with the clear reading from the conclusions from AG Rantos: "the form or type of conduct that is adopted by a dominant undertaking is not decisive in itself. What matters is whether the conduct tends to restrict competition or is capable of having that effect" (§61). Indeed, a self-preferencing practice can be deemed as abnormal under competition law provisions when it deviates from a "competition on the merits" and from the "special responsibility" of the dominant operator. It is case by case analysis, in which the specific "factual, legal and economic context of that practice" (§56) are weighted to decide whether the practice is consistent with competition on the merits.

Hence, a self-preferencing practice cannot be rejected for the only purpose of protecting the structure of the market. Then, should its effects be verified in terms of consumer welfare? And how to analyse a self-preferencing practice that could have positive effect on the welfare in a static perspective but negative effect on the structure of the market putting at risk dynamic efficiencies?

Once more, the conclusions from AG Rantos can shed lights on our questionings. First, the AG reminds of the objective difficulty in quantifying any changes in consumers well-being (§107), since this well-being can be assessed not only in prices, but also in innovation, quality or choice (§107). Requiring its assessment would be an elegant solution from an economic standpoint, but widely inefficient from the perspective of applying competition law in a timely manner. Therefore, it seems unlikely that we could face a case-law where the welfare effects of the self-preferencing practice are measured. Secondly, when sanctioning an exclusionary practice, the likely restrictive effect on the structure of the market is not a sufficient proof from the competition authorities. Instead, they should demonstrate "that such an exclusionary practice impairs the effective competition structure, while at the same time verifying that it is also liable to cause actual or potential harm to consumers" (§108).

In the frame of demonstrating the effects, the Crémer report suggests reversing the burden of proof for self-preferencing practices in digital markets so the platform would bear the burden of proving that self-preferencing has no long-run exclusionary effects on product market.[38] The reversal of the burden of proof is supported by Bougette and others since it would procedurally be efficient to reverse the burden of proof on the

[38] Jacques Crémer, Yves-Alexandre de Montjoye and Heike Schweitzer, 'Competition Policy for the Digital Era' (2019) Final Report, European Union.

best-informed party.[39] However, this proposal is also criticized, as it would set a too high burden of proof given the limited circumstances under which competition authorities accepted objective justification defence in abuse of dominance cases.[40] Additionally, one should be cautious with this reversing the burden of proof, which would result in treating self-preferencing as prima facie unlawful practice, without acknowledging the potentiality of pro-competitive effects on digital markets, without yet substantial evidence nor competition law practice.[41] Ultimately, sanctioning an abusive practice under EU Competition law follows a casuistic approach, which seems to be one of the drawbacks of competition law versus regulation in digital markets. Indeed, while reducing the risk of errors, the effects of such a prohibition decision is only binding to the sanctioned company.[42]

Therefore, should self-preferencing be banned *per se*, without any assessment of the conduct's effects in terms of economic or consumers welfare, potentially protecting competitors to the detriment of consumers, or are there other alternative approaches?

4 Regulating equal treatment in the European digital market

There is nothing new in questioning refusals to deal and essential facilities on regulated markets. While briefly referred to earlier in this paper, the Trinko case Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. (2003)) is a good illustration from the US side of an antitrust claim on a regulated market, where the Supreme Court answers on how to approach this interplay. More precisely, the case was about the interplay between the antitrust claim for a refusal to provide access to an essential facility where remedies can be enforced by the sectoral regulator. According to Petit[43] the Supreme Court's reasoning was based on a costs/benefits analysis, in which antitrust enforcement would have limited additional benefits where there is already a regulatory structure to reduce and remedy the risks of competitive harm. The European Commission's approach differs since sectoral regulators or remedies do not

[39] Patrice Bougette, Axel Gautier, and Frédéric Marty 'Business Models and Incentives: For an Effects-Based Approach of Self-Preferencing?' (2022) 13 *Journal of Competition Law and Practice* 136.

[40] Rod Carlton and Rikki Haria, 'Self-Preferencing – Legal and Regulatory Uncertainty for the Digital Economy (and Beyond?)' (2020) CPI Antitrust Chronicle.

[41] Bougette, Gautier and Marty (n 39).

[42] Anne C Witt, 'Platform Regulation in Europe – Per Se Rules to the Rescue?' [2022] 18 Journal of Competition Law & Economics 670.

[43] Nicolas Petit, 'Circumscribing the scope of EC competition law in network industries? A comparative approach to the US supreme court ruling in the Trinko case' (2004) Journal of Network Industries 347.

preclude the application of competition law.[44] However, it seems relevant, in the light of the Google Shopping case and the multiple digital markets regulations, to ask whether regulation should come to the rescue on digital markets when it comes to self-preferencing.

Bougette and others have shown that self-preferencing is not systematically detrimental to the consumer if an effects-based approach is adopted.[45] However, two dimensions specific to digital ecosystems must be taken into consideration.

First, the conditions to characterise the eviction of a complementor (i.e. a company that uses the services of a platform but that may compete with the services it provides itself or with those of other operators that the platform could favour if they prove to be more profitable in terms of commissions) may be difficult to characterise *ex post* because of the opacity of the algorithms. The increasing requirements on platforms in terms of transparency of algorithms can be explained in this context (see Regulation 1150/2019 on promoting fairness and transparency for business users of online intermediation services, e.g. *Platform to Business Regulation*). However, is transparency sufficient and should it not be complemented by higher requirements in view of the private regulatory power that the company has in relation to the firms operating in its ecosystem? The dominant firm (even if this dominance is specific to an ecosystem)[46] may face a responsibility commensurate with its power, knowing that it is able both to determine the rules of the competitive game and to change them unilaterally.

Secondly, digital markets are more exposed to the emergence of structural competition failures. Winner-takes-all logics and the importance of barriers to entry due to the incumbency advantage (which is linked to the diversity of activities and the control of massive, constantly renewed, and diversified data flows) imply that the dominant position once extended by anti-competitive leverage or more likely by merit alone will be very difficult to challenge in the future. Similarly, the manipulation of algorithms by artificially reducing the visibility of a third-party service results in a deterioration in the natural results of search engines which may have a self-perpetuating effect in the long term even after the practices have ceased.[47]

This can result in numerous damages to competition which divided into several categories. It may involve an alteration of consumers' freedom of choice or an

[44] 2003/707/CE, *Deutsche Telekom AG* [2003]; §54 "The Court of Justice of the European Communities and the Court of First Instance of the European Communities have consistently held that the competition rules may apply where the sector-specific legislation does not preclude the undertakings it governs from engaging in autonomous conduct that prevents, restricts or distorts competition".

[45] Bougette, Gautier and Marty (n 39).

[46] Argument against equating 'power' in 'platform power' to market power in Orla Lynskey, 'Regulating 'Platform Power'' (2017) LSE Legal Studies Working Paper 1/2017, 10.

[47] Case T-612/17, *Google and Alphabet v Commission (Google Shopping)* [2021] §385, §399, §430.

irreversible weakening of the market structure, leading to impairing the competition process that is detrimental to innovation and the dynamic efficiency of markets.

Several sets of solutions are possible.

A first set of solutions consists in EU initiatives leading to the complementing of competition rules by sectoral regulation tools placing asymmetric obligations on firms qualified as gatekeepers or holding regulatory power over a given ecosystem. The DMA, the DSA and the P2B Regulation are examples of this approach. They aim to strengthen the powers of complementors by guaranteeing them better access to information, data portability that reduces their dependence on a given ecosystem and by imposing on these same ecosystem keystones or gatekeepers' obligations[48] of transparency of algorithms, accountability of decisions, and appeals that suspend dereferencing decisions.

A second set of solutions consists in extending remedies inspired by the theory of essential facilities to platforms by subjecting them to a neutrality obligation[49]. They are required not to apply differential treatment to the detriment of competitors. The Shopping judgment goes in this direction. Beyond the European case, initiatives have emerged in the United States to apply common carrier status to certain platforms or to regulate them under a public utility regime.

The functioning of digital ecosystems questions some dimensions that have long been neglected by an antitrust law solely based on economic efficiency. These dimensions deal with the question of the exercise of economic power vis-à-vis trading partners and of a private regulatory power. These two dimensions recover the notions of asymmetries of bargaining power in transactions and private regulation on which the U.S. House of Representatives Subcommittee on Antitrust insisted on in its 2020 investigation of competition in digital markets (U.S. House, 2020).

For instance, on 8 June 2021, Ohio AG Dave Yost filed a lawsuit to declare Google a public utility.[50] According to the press release issued following the filing, "it seeks a legal declaration that Google is a common carrier (or public utility) subject to proper government regulation". Alongside the notion of public utility, therefore, one should consider the common carrier one. We should also quote a Court Justice Clarence

[48] Cf Bougette, Gautier and Marty (n 39): regulation does not deal with damage caused by dominance as it is the case in Antitrust but with a theory of 'gatekeeper harm' which is the power to manipulate the competitive game in a giver ecosystem.

[49] Lynskey (n 46) points out that the regulation of Google as a public utility was proposed by Marina Lao. Marina Lao, 'Search, Essential Facilities and the Antitrust Duty to Deal' (2013) Northwestern Journal of Technology and Intellectual Property 275. Lynskey even shows that the Conseil National du Numérique had developed such reflection that eventually led to a regulation proposal in 2014. Conseil National du Numérique (CNNum), 'Neutralité des plateformes: Réunir les conditions d'un environnement numérique ouvert et soutenable' (May 2014) <https://cnnumerique.fr/files/2017-09/CNNum_Rapport_Neutralite_des_plateformes.pdf> accessed 15 October 2022.

[50] Common pleas court of Delaware County, Ohio civil division, case n°21 CV H 06 0274.

Thomas' concurring in a Supreme Court judgment ruling on the suspension of Donald Trump's account by Twitter issued in April 2021. It seems more and more obvious that some kind of regulation may be applied to digital platforms in addition to competition laws enforcement.

Following Kirat and Marty, a qualification as public utility or common carrier can be used to control the right of an economic actor such as a platform to exclude third parties without having to characterise an infrastructure as an essential one.[51] Within the US legal framework qualification of common carrier allows public authorities to regulate the exercise of the right to exclude.[52] There is no need to demonstrate a dominant position in a given relevant market. Additionally, such a qualification is not limited to network industries and can encompass activities beyond the scope of 'natural monopolies'. According to the US Supreme Court case law this qualification may be applied since: « a business, by circumstances and its nature, … rise[s] from private to be a public concern » (German Alliance Ins. Co. v Lewis, 233 U.S., 389, 1914).

The application of a public utility regulation can be justified to guarantee the access to an infrastructure under non-discriminatory conditions. It is the notion of public interest that makes it possible to qualify a company in this way and that can lead it to be regulated in such a way as to give access to its services to all users without discrimination.[53] The same reasoning applies to the proposal to apply to Google Ohio's State law on public utilities. According to the State Attorney General, "[t]here is a fair argument that some digital platforms are sufficiently akin to common carrier or places of accommodation to be regulated". The definition of public utility under Ohio law provided by the Public Utility Commission of Ohio states that: "an entity may be characterized as a public utility if the nature of its operation is a matter of public concern and if membership is indiscriminately and reasonably made available to the public. A corporation subjects those services to public utility or common carrier status when it serves a substantial part of the public in a way that makes its methods of operations a matter of public concern, welfare, and interest".

[51] Thierry Kirat and Frédéric Marty 'Affectation with a public interest, between antitrust laws and regulation: Lessons from the U.S. experience of the first decades of the 20th century for online ecosystems' (2022) 1 OFCE Working Papers 1-2022 <https://www.ofce.sciences-po.fr/pdf/dtravail/OFCEWP2022-01.pdf> accessed 22 November 2022.

[52] Adam Candeub, 'Bargaining for Free Speech: Common Carriage, Network Neutrality and Section 230' (2020) 22 Yale Journal of Law and Technology 391.

[53] The notion of a common carrier as used by Thomas in his opinion does not relate to the market for goods and services but to the market for ideas, in: Nathalie Nielson, 'Le blocage de "Parler", le droit antitrust et le libre marché des idées' (2021) XXXV Revue internationale de droit économique 75.
Nevertheless, the same underlying economic issues prevail with regard to market access and thus self-preferencing Justice Clarence Thomas, significantly uses the notion of gatekeeper, covers in his reasoning both the market of goods and services and the market of ideas: « [The gatekeeper] can suppress content by deindexing or down listing a search result or by steering users away from certain content by manually altering autocomplete results ».

A regulation appears as possible way to tackle competition law related issues which consequences go far beyond the efficiency dimension.

The same holds true in the EU, with the DMA (Digital Markets Act). Its objectives are not efficiency-related as the one of competition rules (Article 102 TFEU). The DMA, unlike the NCT (New Competition Tool) of June 2020, is promoted as complementary to competition rules. It addresses issues of market access (contestability) and ensuring undistorted competition (fairness). It is a matter of preserving both the competition for the market (among ecosystems) and the competition on the market (within an ecosystem).

The shortcoming of this solution is the usual costs and limitations of sectoral regulation.[54] Moreover, such regulation would not only be permanent but would also cover extraordinarily diverse markets and a perimeter that would shift as Big Tech diversifies.

The last set of solutions holds in the different modalities of unbundling as implemented in the liberalisation of the network industries. Preventing conflicts of interest without incurring the costs of incessant monitoring and undue limitation of the strategic autonomy of firms can be achieved through two tools. One is functional separation and involves compliance and corporate governance rules that are sufficiently robust to ensure the existence of Chinese walls between different divisions of companies. The other, radical, is a structural remedy, a dismantling of the vertically integrated company. This remedy, proposed by Lina Khan,[55] is rooted in the mythology of American antitrust, although it is rarely used and is highly contested in terms of the procedural costs involved and possible efficiency losses. It is a deterrent argument, but is it credible? The last major structural remedy is one that has been applied to AT&T in 1982,[56] but in a very specific context much more related to sector specific liberalisation. It appears that the dismantling of companies, except in the event of dissolution of trusts

[54] Dennis W. Carlton and Randal C. Picker, 'Antitrust and Regulation' in Nancy L. Rose (ed.) Economic Regulation and Its Reform: What Have We Learned? (National Bureau of Economic Research 2014).

[55] Lina Khan, 'The Separation of platforms and commerce' (2019) 119 Columbia Law Review 973. Lina Khan differentiates between behavioural remedies aiming to policy the behaviour of firms and structural remedies which target their incentives to engage in a practice. The author argues that the structural integration of dominant platforms results in putting them in competition with businesses depending on them and identified competitive risks such as discrimination, lock in effect and appropriation of sensitive business information. Therefore, the separation is relevant in digital markets favouring monopolistic market structure. While recognizing that structural separations have been abandoned in the US, the author makes an overview of five separation systems and identify their similarities, among which that the success of a separating is dependent from its timing and that a ban can take different forms, from complete to partial, and be coupled with common carriage rules. In the specific case of digital markets, Lina Khan argues that behavioural remedies would be more costly and challenging to implement due to the information asymmetry between the integrated platform and the public enforcers, hence, structural remedies would overcome this opacity. Finally, recognizing that vertical integration can generate efficiencies, the author stands for a case-by-case analysis, analyzing, among which, whether the digital platform is dominant and serves a gatekeeper intermediary and whether that dominance is likely to be durable and persistent.

[56] United States v. American Tel. And Tel. Co. [1983] 552 F. Supp. 131 (D.D.C. 1983).

such as Standard Oil in 1911,[57] is very rare in US Antitrust practice. According to Crandall, only four to five structural remedies have been used in cases not resulting from mergers or other business combinations.[58] Not only it is difficult to separate a company that has earned its market position through organic growth but it also appears that the implementation of a structural remedy results in a long process challenging its effectiveness and therefore imposes significant transaction costs.[59]

Additionally, the Commission's practice shows an "overwhelming preference" for structural remedies in merger cases, contrasting to antitrust cases, where structural remedies are very rare.[60] This observation was aligned with the Art 7 of Regulation 1/2003 on the implementation of the rules on competition laid down in Articles 81 and 82 of the Treaty

> "Structural remedies can only be imposed either where there is no equally effective behavioural remedy or where any equally effective behavioural remedy would be more burdensome for the undertaking concerned than the structural remedy"

Structural remedies in Art 102 cases are subsidiaries to behavioural ones following the reasoning that Art 102 does not prohibit dominant, but only its abuse, while merger control monitors structures. However, Korbinian Reiter[61] points out three counterarguments: an anticompetitive conduct can consist of a change in the structure of the undertaking, the structure of the undertaking may be a precondition for anticompetitive conduct, and the structure of the undertaking can be the consequence of an abusive conduct. Additionally, and despite of the inherent difficulties of implementing structural remedies, they have the advantage to have an effect on the incentives of the market players.[62]

The New Competition Tool[63] (NCT) welcomes market structure-based competition tool to tackle structural risks for competition and structural lack of competition with a

[57] Standard Oil Co. Of New Jersey v. United States [1911] 221 U.S. 1.

[58] Robert W. Crandall, 'The Failure of Structural Remedies in Sherman Act Monopolization Cases' (2001) 80 The Oregon Law Review 109.

[59] Judge Wyzanski's position in the 1953 decision is fully evocative: "it takes no Solomon to see that this organism cannot be cut into three parts and viable." *U.S. v. United Shoe Mach.*, 347 U.S. 521, 1954.

[60] This observation was confirmed by a study from Frank Maier-Rigaud and Benjamin Loertscher in which they reviewed 309 Commission decisions to accept or impose remedies in antitrust and merger cases between November 2004 and November 2018. Frank Maier-Rigaud, Benjamin Loertscher 'Structural vs. Behavioral remedies' (2020) CPI Antitrust Chronicle.

[61] Korbinian Reiter 'Market Design Powers of the European Commission? Remedies under Articles 7 and 9 Regulation 1/03' (2020) 13 Munich Studies on Innovation and Competition *Springer* 213-251.

[62] Patrice Bougette, Frédéric Marty 'Quels remèdes pour les abus de position dominante ? Une analyse économique des décisions de la Commission européenne' (2012) 3 Concurrences 30-45.

[63] European Commission 'New Competition Tool' Inception Impact Assessment 04 June 2020.

limited sectoral scope, which could include digital or digitally enabled markets. The policy aims intervene before a dominant company forecloses or raises its costs, so without a prior finding of an infringement to Art 102. The tool would allow the Commission to tackle competition problems that cannot be addressed by EU competition rules, for example, the tool would not require the company to be dominant. The economic evaluation of the NCT[64] makes a strong case for not limiting its applicability to dominant firms and for the possibility to address practices not tackled under competition law, such as algorithmic tacit collusion. However, the authors are more cautious when it comes to the structural risks for competition, when the harm is about to affect to market. The report also identifies some concerns concerning its implementation, among which the fact that a broad interpretation of the mandate of the NCT deprives firms of legal certainty and allows courts for more interpretation.

The DMA itself provides for structural remedies in case of repeated failures. Indeed, Article 75 states that

> "The Commission should investigate and assess whether additional behavioural, or, where appropriate, structural remedies are justified, in order to ensure that the gatekeeper cannot frustrate the objectives of this Regulation by systematic non-compliance with one or several of the obligations laid down in this Regulation. This is the case where the Commission has issued against a gatekeeper at least three non-compliance decisions within the period of 8 years, which can concern different core platform services and different obligations laid down in this Regulation, and if the gatekeeper has maintained, extended or further strengthened its impact in the internal market, the economic dependency of its business users and end users on the gatekeeper's core platform services or the entrenchment of its position. A gatekeeper should be deemed to have maintained, extended or strengthened its gatekeeper position where, despite the enforcement actions taken by the Commission, that gatekeeper still holds or has further consolidated or entrenched its importance as a gateway for business users to reach end users".

In this context, an intervention on the market structure might be necessary to remedy a situation of structural competition failure. This is the case, for example, with the British market investigations. Their purpose is not to set the rules of the game as legislation does, nor to establish a legal precedent as a judgment does, but to address a competitive situation that is deemed unsatisfactory.

[64] Gregory S. Crawford, Patrick Key, Monika Schnitzer 'An Economic Evaluation of the EC's Proposed "New Competition Tool" (2020) Publications office of the European Union.

As Amelia Fletcher writes: "market investigations can also address markets which have become 'stuck' in bad equilibria, which are good for neither firms nor society, but where some form of intervention is required to make the shift to a better equilibrium."[65]

From a theoretical point of view, the guarantee of neutrality could be achieved through structural remedies that would be capable of resolving the problems of conflicts of interest and avoiding the costs associated with constant supervision of the behaviour of pivotal operators. However, this solution has many limitations, such as its infringement of the fundamental rights of firms and its economic cost. Is regulation not then a more reasonable solution?

The arguments in favour of regulating the activities of certain platforms considered, if not essential, then socially critical are not limited to marketplaces or search engines. Here, the indispensability character is rather difficult to defend unless the analysis is based on some of the elements presented above. If we follow the logic of the European texts, regulatory supervision can be envisaged in several cases.

This may firstly be the case if the target company occupies a position that puts it in a position of access lock. This corresponds to the gatekeeper position that a given platform enjoys for access to a digital ecosystem and echoes the DMA.

Specific regulation can also be justified in this same approach by the fact that a given search engine is in a *de facto* monopoly position for access to the Internet (which was the case for Google Search insofar as it was also pre-installed on Safari and therefore in the iOS ecosystem). The structuring effects of the algorithm on the market dynamics may then give it a critical character that calls for specific ex ante obligations, insofar as the characterisation of *ex post* manipulations may be difficult and the remedies that may be imposed in the context of a competition procedure may prove insufficient to correct the anti-competitive effects.

Ex ante measures can also be justified on the basis of a market structure that would inherently favour the implementation of anti-competitive practices both because of the opacity of its functioning and the incentives it would generate for the dominant undertaking. This argument can be applied to an infrastructure that is much more obviously crucial than marketplaces or even search engines, in this case the hardware infrastructure needed for the cloud.

For instance, this is the position supported by Benzina.[66] His demonstration focuses on the infrastructure-as-a-service used in cloud services (IaaS). This covers data centers, servers, storage capacities and networks. This infrastructure supports two sets

[65] Amelia Fletcher 'Market investigations for digital platforms: Panacea or complement' (2021) 12 Journal of European Competition Law & Practice 44.

[66] Kamila Benzina 'Cloud Infrastructure-as-a-Service as an Essential Facility: Market Structure, Competition, and the Need for Industry and Regulatory Solutions' (2019) 34 Berkeley Tech. LJ 119.

of services: platform-as-a-service (PaaS) and software-as-a-service (SaaS). The first services correspond to resources essential to companies such as databases and application development tools (programming languages, libraries, etc.). The second services allow applications and services to be run directly on the cloud for the benefit of customers. The essential point to consider for our purposes is that the architecture and management choices of this infrastructure layer have a framing effect on the next two layers and can contribute to a lock-in effect on the user companies.

The IaaS layer corresponds to a set of hardware resources developed and made available to third parties by a given operator. This layer is essential for developing and testing algorithms and applications, hosting websites, managing internal company applications and managing native cloud applications.

There is no 'natural monopoly' *per se* in the field. Amazon, Microsoft, Google, Alibaba and IBM offer competing infrastructures. However, these are ecosystems between which user firms can only move with great difficulty because of the locking effects specific to the technologies developed and the complementary nature of the investments made. The investments required from the firms concerned make it very difficult, if not illusory, for them to make new entries. Indeed, the level of stranded costs for new entrants plays as barriers to entry. Admittedly, the incumbents have previously invested to acquire their positions, but they have been able to do so gradually, particularly through internal growth operations, and have been able to absorb their investments through their use primarily for their own activity, as shown in the case of Amazon and AWS.[67] Developing a competing infrastructure would not only be difficult to finance given the sunk costs of failure but would also face difficulties in gaining access to key technologies due to the research and development investment intensity of the dominant operators and controlled patents. New entrants would also face switching costs from the incumbents' customers. Not only would the transition from one IaaS provider to another be costly, but it would be particularly complex technically. The new entrant would have to provide particularly demanding security and performance guarantees to overcome the risk aversion of users.

IaaS is therefore also a candidate for the application of the essential facilities theory to digital infrastructures, much more so than certain marketplaces that would have locked their customers in by encouraging them to single home via loyalty programs, or even more so than search engines. However, the indispensability criterion in the sense of the Bronner judgment cannot be satisfied insofar as there are alternatives. Nevertheless, it appears that inter-IaaS competition is limited and that the users of

[67] Edward Snyder, Jason Canaday, Marley Hughes 'Amazon's Three Major Lines of Business' (2022) George J. Stigler Center for the Study of the Economy & the State Working Paper, available at SSRN, accessed 14 October 2022 <https://ssrn.com/abstract=4162112>.

each IaaS can be locked out and potentially be the object of anti-competitive or restrictive strategies. The problem is thus similar to that of the DMA. The preservation of the competition process and the prevention of abusive behaviour based on the exploitation of situations of economic and technological dependence may justify the consideration of regulatory solutions geared to the objectives of maintaining the contestability of markets and the fairness of their operation.

For example, it may be a question of promoting data portability, service interoperability or preventing anti-competitive tying strategies between the different layers of cloud services. As Benzina points out,[68] the sanctioning by competition rules of strategies amounting to the crowding out of competitors or commercial partners, through predatory pricing or tying, would be particularly difficult to obtain because of the costs, delays, and low probability of success of actions brought by complainants, especially in the case of the US Antitrust.[69]

However, opting for structural solutions, such as unbundling, could prove particularly difficult from a technical point of view, especially in view of the risks of lost efficiencies, and costly for the firms concerned, for whom cloud activities are among the most profitable business lines.

5 Conclusion

Having completed this overview, it is time to return to the questions presented in our introduction.

The first question concerned the relevance of the competition tool to ensure equal competition when a platform exercises a dual role placing it in a position to manipulate its algorithms to crowd out user firms and giving it the incentives to engage in this strategy. The opacity of the algorithms and the subsequent difficulty of characterising the theory of damage may lead to under-enforcement of the rules through too many cases of false negatives. It may then be possible to reverse the burden of proof, as recommended by Crémer and others.[70]

The second question concerned the situation of firms using services provided by large platforms and various digital ecosystems and the need to guarantee them access under non-discriminatory conditions even if each of these platforms and ecosystems does not meet the indispensability criterion necessary for the activation of the essential facilities theory as defined in the Bronner judgment. In American antitrust law, the

[68] Benzina (n 66) 138.

[69] Hal J. Singer 'Paid Prioritization and Zero Rating: Why Antitrust Cannot Reach the Part of Net Neutrality Everyone is Concerned About' (2017) 17 Antitrust Source.

[70] Crémer and others (n 38).

courts had to deal with this issue in particular in the *Hecht* case in 1977. For the District of Columbia Court of Appeals "[to] be 'essential' a facility would be economically infeasible, and its denial of its use inflicts a severe handicap on potential market entrants" (*Hecht v Pro-Football Inc*, 570 F2f 982,985, 992, D.C. Cir. 1977). The standard is then much less demanding. How can such a logic be applied without leading to a framework that would force installed operators to 'subsidise' new entrants or their commercial partners in a convenient facility logic?[71] Recourse to the concept of abuse of economic dependence, as it exists in many Member States' laws, could then be a tool for protecting current commercial partners.

The third question was related to the core of competition law: its goals. A per-se ban of self-preferencing under competition law would amount to protect the market structure or competitors. Ultimately, competition law in the EU aims to protect consumer welfare, and the protection of the market structure can only be linked to this goal, but not substitute for it. While recognizing that self-preferencing practices are harming competitors by default, it can only be banned under competition law if there are no welfare effects beneficial for the consumers.

A fourth question concerned the treatment of the evolution of firms' strategies in terms of opening up to complementors and implementing self-preference strategies. Competition law cannot sanction such practices *per se*. First, a firm's business model may evolve over time in a direction that may not be systematically unfavourable to the consumer. A case-by-case assessment of the effects is necessary. The same applies to self-preference, whose net effects cannot be considered as unfavourable in themselves. Nevertheless, taking *ex post* effects alone into account may pose problems. On the one hand, it is the special responsibility of a dominant operator (even if this dominance is specific to a given ecosystem) not to treat identically situated commercial partners in different ways, otherwise this could lead to exploitative or predatory abuses on the downstream market. On the other hand, the effects of discrimination (which may take the form of downgrading, de-indexation, etc.) may be irreversible and competitive remedies may not be sufficient to restore the competitive situation that would have prevailed in the absence of the practice. In this context some form of ex ante regulation as introduced by the P2B Regulation, or the DMA may be necessary.

The fifth and final question concerned structural solutions, in other words, dismantling and the imposition of a 'speciality principle'[72]. Can these be less costly to implement than permanent regulation, which is the responsibility of competition

[71] Ridyard (n 10).

[72] Conseil d'Etat, Caisse des écoles du 6ème arrondissement [1906] commented by Maurice Hauriou 'La distinction des établissements publiques et des établissements d'utilité publique, Note sous Conseil d'Etat, 22 mai 1903, Fourcade, 22 mai 1903, Darestre et autres, S. 1905.3.33' (2014) Revue Générale du Droit.

authorities with limited resources? We have seen that this 'radical restorative remedy' is often put forward in the literature, but that its actual implementation has only rarely been observed because of its economic cost, its complexity, and its impact on the fundamental rights of firms.

It therefore appears that some form of ecosystem neutrality obligation, even outside the scope of essential facilities, can be considered as the 'worst solution except for all the others.

Promoting rules that impose neutrality on critical digital ecosystems (which therefore act as gatekeepers or bottlenecks) for third parties avoids the pitfalls that characterise alternative solutions but does not constitute a first-order optimum with regard to the undesired effects that these rules may induce.

When considered in a favourable light, neutrality requirements fulfil several objectives without incurring disproportionate economic costs. Neutrality helps to prevent strategies of extension or consolidation of dominant positions. Prevention is even more necessary as the remedies resulting from antitrust decisions have barely proven their capacity to restore the conditions of competition and to correct the effects of the sanctioned practices. Moreover, they avoid the implementation of structural remedies whose potential costs in terms of economic efficiency and implementation difficulties have been discussed. Neutrality obligations may also appear to be less restrictive and less intrusive than specific regulation of the different digital ecosystems identified as critical.

Beyond this aspect, neutrality requirements can also be discussed insofar as they undoubtedly lead to a change in the role assigned to competition rules. Accordingly, as Orbach points out, the mandated neutrality standards lead to the imposition of an obligation on dominant platforms to treat all trading partners alike, not with a view to efficiency but with the aim of "preserving fairness in the marketplace by levelling the playing field to ensure that all market participants enjoy equal opportunities"[73].

The emphasis put on platform neutrality leads to the view that the existence of discrimination in market access conditions is an antitrust issue. In addition, mandating platform neutrality has a meaning that goes far beyond that of net neutrality in that it both signifies a major constraint on the business model of digital companies and leads to impose them duties that usually fall within the scope of the essential facilities theory.

This trend towards imposing neutrality obligations on the pivotal firms in the main digital ecosystems is not limited to the DMA but is part of a gradual extension of the rules applicable to public undertakings formerly holding exclusive rights to firms

[73] Barak Orbach 'Mandated Neutrality, Platforms, and Ecosystems' (2021) Discussion Paper n°21-28, December.

whose market positions are due to their own merits[74]. The obligations imposed on the companies concerned are intended to offer equal opportunities to rival companies and are therefore not subject to the same restrictive conditions that fall under the application of Article 102 of the Treaty in relation to the essential facilities doctrine.

This broadening of Article 106 TFEU's scope leads to its application to any situation in which an undertaking that has private regulatory power over its trading partners and that is likely to be in a situation of conflict of interest. Nevertheless, the restrictive conditions induced by the effects-based approach to the application of Article 102, which require the Commission to consider the net effect of the practices in the light of relevant economic and legal context, do not apply in this case.

Thus, while the neutrality obligations that emerge from the Commission's policy are more effective in guaranteeing a level playing field than alternative solutions (antitrust enforcement, ecosystem regulation or the imposition of structural remedies), attention must be paid to their impact on the effects-based approach defended by the Court Justice.

[74] Pablo Ibáñez Colomo 'Will Article 106 TFEU Case Law Transform EU Competition Law?' (2022) 13 Journal of European Competition Law and Practice 6, pp.385-386. The author relies on the case T-93/18 judgement *International Skating Union* v. *Commission* as an example of the broadening of Art 106 TFEU's interaction with Article 101 and 102. In *International Skating Union* a sport federation organises competitions but also clears competitions organise by third parties through eligibility rules which were found to restrict competition. The press release from the judgement explicates the conditions of which Art 101 applies "In that regard, the General Court considers that the obligations binding on a sports federation in the exercise of its regulatory function under Article 101 TFEU are those consistently set out in the case law relating to the application of Articles 102 and 106 TFEU, 2 with the result that, in those circumstances, the ISU is required to ensure, when examining applications for authorisation, that third-party organisers of speed skating competitions are not unduly deprived of access to the relevant market, to the extent that competition on that market is distorted."

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email: editors.jlmi@iuse.it

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