

Faculté de droit et de criminologie

The future of AI liability in the European Union

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This thesis has been a journey marked by unexpected turns and challenges. After an initial change of research topic at the start of the academic year, this research was once again upended when the AI Liability Directive was withdrawn midway through the writing process. This development compelled me to rethink not only the structure of my argument but also the broader approach and direction of this project.

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1. Introduction

In recent years, artificial intelligence (AI) has become a central feature of modern economies and societies. Its integration into a plethora of sectors – ranging from healthcare and finance, to transportation and consumer products – raises not only new opportunities, but also complex legal and ethical challenges. Among these, the question of liability for harm caused by AI systems has emerged as a critical issue for policymakers, courts, and legal scholars alike.

In this evolving legal landscape, the European Union (EU) has taken several legislative steps to address these challenges. Alongside the AI Act, two instruments have been particularly central to the debate on AI liability: the revised Product Liability Directive (rPLD), adopted to modernize the 1985 framework, and the AI Liability Directive (AILD), a proposal intended to complement the rPLD by covering fault-based, non-contractual civil liability for AI-induced harms. While the rPLD was successfully adopted, the AILD was withdrawn in early 2025, leaving notable gaps.

Thus, this thesis explores how the EU's liability regime is adapting to the digital technologies and the unique characteristics of AI systems, including their complexity, opacity, and unpredictability. It places particular emphasis on the implications of the withdrawal of the AILD and examines the coherence of the current framework in the absence of a dedicated AI-specific liability instrument.

Three core research questions guide this analysis:

1. *How does the revised Product Liability Directive adapt to digital technologies, and particularly to AI?*
2. *What was the objective of the AI Liability Directive proposal, and which factors influenced its withdrawal?*
3. *What is the impact of the proposed withdrawal of the AILD, and how should the EU react?*

In answering these questions, this thesis adopts a descriptive and critical legal approach based on doctrinal analysis, supported by relevant policy documents, legislative texts, case law, and academic literature. Further, it attaches great importance in incorporating insights from practitioners when available, with the aim to provide a contextual understanding of the practical challenges and perceived regulatory gaps.

The structure of this research follows a logical progression: at first, it begins with a conceptual discussion of digital sovereignty and the EU's regulatory philosophy, followed by an analysis of the tension between regulation and innovation, highlighting the regulatory doctrines' differences between the EU and the United States (US). Then, it explores the evolution of the EU's liability framework, focusing on the rPLD and its interaction with AI systems. Finally, the thesis turns to the AILD, examining its objectives, legal design, and the political and institutional reasons behind its withdrawal, before assessing the broader implications and offering prospective recommendations for the EU's future direction.

In doing so, this thesis aims to contribute to the ongoing legal discourse on AI governance by clarifying the strengths and limitations of the current EU liability framework and by outlining a path forward for a more comprehensive and coherent regulatory approach.

2. Digital Sovereignty

2.1. From sovereignty to digital sovereignty

Since its inception, the EU integration project has had an internal focus, intending to secure peaceful relations between its Member States by relying on the rule of law. However, this focus is gradually shifting towards an external one. If Member States want to take control of their own destiny, they will have to work together on a growing number of issues, including security and defence. This collective power comes at a price: Member States may have to give up internal sovereignty to gain external sovereignty, not only vis-à-vis third countries but also vis-à-vis powerful private actors operating in the digital sphere.¹ Over the past few years, the notion of digital sovereignty has increasingly found its way into the political discourse of the European Union. From a legal perspective, the association of the words "*sovereignty*" and "*Europe*" has traditionally evoked the idea of the autonomy of the EU legal order. Indeed, as far back as *Costa v ENEL*, the Union has been conceptualized by the Court of Justice of the European Union (CJEU) as an independent source of law,² with EU law constituting: "*A legal order capable of functioning as a self-referential system of rules that is both coherent and complete*".³ European sovereignty thus implies a vision of the European Union as an autonomous actor. This is true whether one considers the EU as "*legislating*" (having the capacity to adopt pieces of legislation, through the European Parliament and the Council), "*adjudicating*" (having the capacity to engage in judicial decision-making, through the European Court of Justice alongside national courts), "*regulating*" (having the capacity to regulate, through the European Commission and regulatory agencies), and "*enforcing*" (having the capacity to enforce EU law, whether through the European Commission or national authorities).⁴

Although sovereignty is traditionally conceptualised at the level of nation-states, it has also been applied to the European context, with the allocation of certain competences to the European Union by its Member States. Furthermore, the fact that the EU can only operate legitimately within the boundaries stipulated by human rights, democracy, and the rule of law does not undermine the concept of sovereignty. Instead, these boundaries signify a conception of sovereignty linked to the Kantian idea of self-governance based on reason, thus involving a deliberate choice as to the limits within which to exercise power.⁵ Even though some scholars have claimed that the concept of sovereignty has become obsolete in the context of globalisation, there is also a trend towards increasing sovereignty and that it can be seen as an elastic concept with different shades and shapes.⁶

When analysing the concept of digital sovereignty, one could understand it as a sub-category of the European Union's sovereignty, specifically in relation to its powers over digital infrastructures. Concomitantly, the implementation of this concept extends the conventional conception of sovereignty, propelling the EU to confront new market structures and security challenges engendered by the disruptive nature of digital technologies.⁷ The profound impact of digital technologies on both societies and individuals, encompassing our actions, communication, and thought processes, is a matter of significant concern. This influence is also evident

¹ M. VAN DER WOUDE, "European Sovereignty: A Union Seeking to Control its own Destiny", in *European Sovereignty* (under the dir. of G. BARRETT, P-C. MÜLLER-GRAFF, J-P. RAGEADE, V. VADÁSZ), Springer, 2024, p. v.

² Judgment of the Court of 15 July 1964, *Flaminio Costa v ENEL*, C-6/64, EU:C:1964:66.

³ J. GUTIÉRREZ-FONS, S. ADAM and K. LENAERTS, "Exploring the autonomy of the European Union Legal Order", *H.J.I.L.*, 2021, Vol. 81, pp. 47-48.

⁴ N. SMUHA, "European Sovereignty: A Union Seeking to Control its own Destiny", in *European Sovereignty* (under the dir. of G. BARRETT, P-C. MÜLLER-GRAFF, J-P. RAGEADE, V. VADÁSZ), Springer, 2024, p. 127.

⁵ P. GUYER, "Kant and the Theory and Practice of Autonomy", in *Kant's system of nature and freedom* (under the dir. of E. FRANKEL PAUL, M. FRED D, J. PAUL), 2003, Vol.20, pp. 115-145.

⁶ R. VATANPARAST, "Data governance and the Elasticity of Sovereignty", *B.J.I.L.*, 2020, Vol. 46, p. 3.

⁷ N. SMUHA, "European Sovereignty: A Union Seeking to Control its own Destiny", in *European Sovereignty* (under the dir. of G. BARRETT, P-C. MÜLLER-GRAFF, J-P. RAGEADE, V. VADÁSZ), Springer, 2024, p. 130.

in the realm of political institutions, thereby impacting the fundamental capacity to exercise sovereignty. The recent proliferation of new EU legislation in the digital sphere – from the Digital Services Package⁸ and the AI Package⁹ to the Data Package¹⁰ – can hence be seen not only as an exercise of EU sovereignty to ensure the protection of EU values (which range from fair competition to democracy), but also as an attempt to maintain and protect its sovereignty in an evolving world. Our reliance on digital technology – and the entities providing it – raises new questions in relation to state sovereignty, at national and EU level. The ability to determine the nature and speed of change lies with the companies, while states are able to control the direction of change.¹¹ While companies may be the driving force behind technological developments, states can use their sovereignty to establish the boundaries within which such development should take place. The notion of digital sovereignty echoes the nations' ability to determine the direction of technological development and to control their digital destiny, which may include control over the entire AI supply chain, from data to hardware and software.¹²

Furthermore, certain references to digital sovereignty broaden the scope beyond the state to encompass the role of both natural and legal persons. This may be expressed directly, for instance, through the assertion that citizens and businesses should possess the capacity to exercise independent control over their interactions with digital technology. Alternatively, it may be expressed indirectly, as in the commitment of states to ensure the protection of their citizens and businesses from the various challenges that threaten their autonomy in the digital sphere.¹³ When considering this concept within the European context, European digital sovereignty can thus be understood as the ability of the European Union, including its citizens and businesses, to decide autonomously on their relationship with (providers of) digital technology. This implies the exercise of control over two entwined elements: the strategic direction of digital technology within the European Union and the concrete digital infrastructure that enables such technology.¹⁴

2.2. Economic digital sovereignty

A considerable number of digital sovereignty claims pertain to control over digital infrastructure, which is commonly associated with productive capabilities and economic power in the digital sphere. This concept can be referred to as "*economic digital sovereignty*"¹⁵, representing the ability of the EU to oversee the production factors of digital technologies and their underlying infrastructure. In this context, the EU's dependency on foreign technology actors is considered a major issue of Europe's digital sovereignty.¹⁶ The EU must curtail its reliance on, and the influence of, technology actors from the US and China, and strengthen its own means of technology production. Concerns in this regard range from Europe's geopolitical position, economic competitiveness and security, to the general welfare of its constituents. Consequently, the EU has been capitalising on its areas of strongest legal competence, encompassing the internal market and competition law, to implement measures

⁸ Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector, *O.J.E.U.*, L.265/1, 12th of October 2022; Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services, *O.J.E.U.*, L.277/1, 27th of October 2022.

⁹ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024; Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final.

¹⁰ Regulation (EU) 2022/868 of the European Parliament and of the Council of 30 May 2022 on European data governance, *O.J.E.U.*, L.152/1, 3rd of June 2022; Regulation (EU) 2023/2854 of the European Parliament and of the Council of 13 December 2023 on harmonised rules on fair access to and use of data, *O.J.E.U.*, 22nd of December 2022.

¹¹ L. FLORIDI, "The Fight for Digital Sovereignty: What it is and Why it matters, Especially for the EU", *Philosophy & Technology*, 2020, Vol. 33, p. 369.

¹² B. LARSEN, "The Geopolitics of AI and the Rise of Digital sovereignty", 8 December 2022, available on <https://www.brookings.edu/research/the-geopolitics-of-ai-and-the-rise-of-digital-sovereignty/>, accessed 27 January 2025.

¹³ J. POHLE and T. THIEL, "Digital Sovereignty", 2020, *I.P.R.*, Vol. 9, p. 2.

¹⁴ N. SMUHA, "European Sovereignty: A Union Seeking to Control its own Destiny", *op. cit.*, p. 132.

¹⁵ *Ibid.*

¹⁶ T. BRETON, "Speech by Commissioner Thierry Breton at Hannover Messe", 20 July 2020, available on https://ec.europa.eu/commission/presscorner/detail/es/speech_20_1362, accessed 28 January 2025.

aimed at enhancing its economic digital sovereignty.¹⁷ The Chips Act is a pertinent example of this dynamic.¹⁸ It established the Chips for Europe Initiative with the objective of enhancing the Union's competitiveness, resilience and innovation capacity in the semiconductor industry. Specifically, it sets up a financial support framework for manufacturing facilities to ensure supply security, and establishes a monitoring mechanism for the semiconductor value chain to respond to disruptions in the supply of semiconductors that impact the proper functioning of the internal market.¹⁹ Other relevant examples include European Union initiatives concerning cybersecurity²⁰, data governance²¹ and network connectivity.²² It is important to acknowledge the EU's recognition of the significance of these initiatives extending beyond the economic domain. The ambition to exercise greater control over the production of digital technology and its infrastructure²³ is further delineated in Article 3 of the Decision on the Digital Decade Policy Programme 2030, which identifies as one of its primary objectives: *"The promotion of a human-centred, fundamental-rights-based, inclusive, transparent and open digital environment where secure and interoperable digital technologies and services observe and enhance Union principles, rights and values and are accessible to all, everywhere in the Union"*.²⁴ The intersection of economic and normative considerations is therefore an inherent feature of the digital landscape.

2.3. Normative digital sovereignty

In view of the aforementioned considerations, allegations relating to the assertion of the European Union's digital sovereignty are not confined to the control of digital technology and its infrastructure but also extend to the self-determination of Europe's digital future through the establishment of norms. By expressing the values that digital technology providers should adhere to and the conditions to which technology should be subjected, Europe has the power to influence the manner in which technology will shape its society. This concept can be referred to as *"normative digital sovereignty"*²⁵, representing the EU's capacity to regulate the normative framework within which digital technologies operate in Europe.²⁶

The European integration project can be regarded as a mechanism for increasing sovereignty. Despite the potential resentment among Member States regarding the transfer of powers to the supranational institutions, their active involvement in these entities enables them to exercise influence over policies and decisions that would have otherwise remained beyond their reach. A salient example of this phenomenon can be observed in the realm of digital services, where issues extend beyond the conventional boundaries of state sovereignty. The digital services industry is governed by private actors who wield powers and resources that are either equivalent to or surpass those of numerous Member States. While these actors may challenge individual states, they must adhere to the common European rules if they wish to benefit from the EU's internal market.²⁷ The influence

¹⁷ D. BROEDERS, F. CRISTIANO and M. KAMINSKA, 'In Search of Digital Sovereignty and Strategic Autonomy: Normative power Europe to the Test of Its Geopolitical Ambitions', *J.C.M.S.*, 2023, Vol. 61, p. 1265.

¹⁸ Regulation (EU) 2023/1781 of the European Parliament and of the Council of 13 September 2023 establishing a framework of measures for strengthening Europe's semiconductor ecosystem, *O.J.E.U.*, L.229/1, 18th of September 2023.

¹⁹ N. SMUHA, *op. cit.*, p. 133.

²⁰ Regulation (EU) 2019/881 of the European Parliament and of the Council of 17 April 2019 on ENISA (the European Union Agency for Cybersecurity) and on information and communications technology cybersecurity certification, *O.J.E.U.*, L.151/15, 7th of June 2019.

²¹ Regulation (EU) 2022/868 of the European Parliament and of the Council of 30 May 2022 on European data governance, *O.J.E.U.*, L.152/1, 3rd of June 2022; Regulation (EU) 2023/2854 of the European Parliament and of the Council of 13 December 2023 on harmonised rules on fair access to and use of data, *O.J.E.U.*, 22nd of December 2022.

²² Regulation (EU) 2024/1309 of the European Parliament and of the Council of 29 April 2024 on measures to reduce the cost of deploying gigabit electronic communications networks, *O.J.E.U.*, 8th of May 2024.

²³ N. SMUHA, *op. cit.*, p. 133.

²⁴ Decision (EU) 2022/2481 of the European Parliament and of the Council of 14 December 2022 establishing the Digital Decade Policy Programme 2030, *O.J.E.U.*, L.323/4, 19th of December 2022, pp. 11.

²⁵ N. SMUHA, *op. cit.*, p. 133.

²⁶ *Ibid.*, p. 127.

²⁷ M. VAN DER WOUDE, *op. cit.*, p. vii.

exerted by these common rules extends well beyond the EU, as they become a *de facto* trading standard with which third states and private actors align themselves by virtue of the "*Brussels effect*".²⁸

Nevertheless, one could question why we can witness the Brussels Effect but not a Washington Effect or a Beijing Effect. While it is difficult for smaller jurisdictions to exert global regulatory power – if Costa Rica decides to impose stringent environmental regulations, companies can simply choose to stop doing business in Costa Rica – it becomes more complex to write off a market of the European Union's size. Yet larger markets have to be complemented with regulatory infrastructures and legal institutions that empower the jurisdiction to subsequently transform market size into tangible regulatory influence. This explains why a Washington Effect or a Beijing Effect cannot be observed as of today. Europe exemplifies this, with its institutions in Brussels and Luxembourg demonstrating a remarkable capacity. China, for instance, has not yet been able to replicate the EU's strong regulatory institutions.²⁹ However, on the other side of the globe, Washington has capable regulatory institutions but lacks the political will to make use of that power. Since the 1990s, Americans have been rather unwilling to regulate. Environmental regulation used to come from California, but since the United States voluntarily stepped back, the Europeans stepped in and took on the role of global regulator.³⁰

Many of the EU's initiatives exhibit a hybrid character in their scope and approach. While these initiatives may primarily focus on establishing norms, they frequently possess a pronounced economic undercurrent, given that the legal foundation typically concerns the harmonisation of the internal market as outlined in Article 114 TFEU.³¹ The AI Act is a prime example of this phenomenon. Indeed, it aims to establish a harmonised legal framework for AI systems placed on the Union market, with the objective of ensuring safety and the respect of existing laws on fundamental rights and Union values.³² The AI Act can be regarded as an exemplary illustration of Europe leveraging its regulatory authority to implement its vision through a comprehensive set of rules that will have repercussions beyond the European continent. This could potentially confer a competitive advantage in the pursuit of AI regulation.³³ Additionally, the Commission has emphasised that the AI Act will foster enhanced legal certainty, which will contribute to the economic development and adoption of AI in Europe. While normative direction-setting aims may be at the forefront of the regulation, one of its explicit objectives also concerns the facilitation of investment and innovation in AI, for instance through the establishment of regulatory sandboxes in all Member States.³⁴ Critics have asserted that the EU has relied on its legislative powers to compensate for its perceived lack of economic strength in the digital sphere, characterising China and the US as the primary producers of technology and Europe as the primary regulator. However, irrespective of the EU's digital sovereignty, its constitutional obligation to uphold human rights, democracy, and the rule of law necessitates the respect and protection of these values within its digital policies. In essence, the pursuit of the EU's economic digital sovereignty must not hinder but rather foster the protection of its fundamental values as articulated in Article 2 TEU.³⁵

²⁸ A. BRADFORD, *The Brussels Effect: How the European Union Rules the World*, Oxford University Press, 2020.

²⁹ *Ibid.*

³⁰ A. BRADFORD, "The Brussels Effect and the European Sovereignty", in *European Sovereignty* (under the dir. of G. BARRETT, P-C. MÜLLER-GRAFF, J-P. RAGEADE, V. VADÁSZ), Springer, 2024, p. 192.

³¹ D. BROEDERS, F. CRISTIANO and M. KAMINSKA, *op. cit.*, p. 1263.

³² Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024

³³ N. SMUHA, "From a Race to AI to a Race to AI Regulation: Regulatory Competition for Artificial Intelligence", *Law, Innovation and Technology*, 2021, Vol. 13, p. 16.

³⁴ N. SMUHA, "European Sovereignty: A Union Seeking to Control its own Destiny", in *European Sovereignty* (under the dir. of G. BARRETT, P-C. MÜLLER-GRAFF, J-P. RAGEADE, V. VADÁSZ), Springer, 2024, p. 132.

³⁵ N. SMUHA, "European Sovereignty: A Union Seeking to Control its own Destiny", *op. cit.*, p. 132.

3. The interplay between digital regulation or innovation

It is a commonly held view that increased regulation of the digital economy hinders innovation and impedes technological progress.³⁶ Advocates of this perspective cite concrete examples that, at least initially, appear to corroborate this assertion.³⁷ They emphasise the remarkable achievements of prominent American tech companies, which have catalysed economic and societal transformations while generating substantial wealth for their shareholders.³⁸ Evidence from Europe serves as a cautionary tale that further substantiates this perspective: European tech regulations are extensive, but globally successful European technology companies are few and far between.³⁹ These observations are then used to claim that there is a causal relationship between a country's digital regulations and its technology industry's performance.⁴⁰ The US have been a leading proponent of the movement against regulation, with a regulatory framework guided by a deeply entrenched techno-libertarian ethos, comprising antitrust laws that are poorly enforced, an absence of a federal data privacy law, and content-moderation rules that are permissive, thereby shielding tech companies from liability.⁴¹ In contrast, the EU has frequently relied on its regulatory capacities, encompassing antitrust legislation, data privacy directives, and content moderation guidelines, in an endeavour to regulate technology corporations and safeguard the rights of European citizens. These regulatory frameworks have exerted a substantial influence on the daily operations of tech companies, impeding their capacity to collect, process, or disseminate data; to design products; and to engage with internet users or other commercial entities within the marketplace.⁴²

However – as evidenced by Appendix 1 – recent studies indicate a shift in public sentiment in the United States, with American political leadership and citizens increasingly questioning the benefits of an unregulated tech economy and recognising the societal harms caused by tech companies.⁴³ Yet the US government has been unable to introduce any significant regulatory reforms due to a continuing fear that a regulatory approach that is too interventionist will hinder innovative activity among tech companies and thereby halt the country's economic and technological progress.⁴⁴ This concern has been exacerbated in the current US – China tech war, which accentuates the importance of maintaining American technological leadership.⁴⁵

It may seem conceivable to adhere to the US reluctance towards digital regulation and presume a causal relationship between the EU's stringent regulatory regime and its dearth of leading companies, since there is no European equivalent to the Big Tech and European companies contribute a mere 4% of the market capitalisation of the world's seventy largest platforms, contrasting with the 73% of the US.⁴⁶ Besides, a plethora

³⁶ The terms "tech regulation" and "digital regulation" refer to legislative, administrative, or enforcement actions that either target the tech sector or digital economy specifically or have a substantial effect on the way tech companies operate, see A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", N.U.L.R., 2024, Vol. 118, p. 386.

³⁷ P. AGHION, A. BERGEAUD and J. VAN REENEN, "The Impact of Regulation on Innovation", A.E.R., 2023, Vol. 113, pp. 2894-2936; J. ANDREW, "Tech Regulation Can Harm National Security", 28th of November 2022, available on <https://www.csis.org/analysis/tech-regulation-can-harm-national-security>, accessed 29th of January 2025; S. OVIDE, "The Hands-Off Tech Era Is Over", 16th of June 2023, available on <https://www.nytimes.com/2022/06/15/technology/government-intervention-tech.html>, accessed 29th of January 2025.

³⁸ A. CHANDER, "How Law Made Silicon Valley", *Emory Law Journal*, 2015, p. 642.

³⁹ *Ibid.*

⁴⁰ *Ibid.*, p. 677.

⁴¹ A. BRADFORD, *Digital Empires: The Global Battle To Regulate Technology*, Oxford University Press, 2023, p. 33.; A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op.cit.*, p. 380.

⁴² A. BRADFORD, *Digital Empires: The Global Battle To Regulate Technology*, *op. cit.*, p. 111.

⁴³ M. ANDERSON, "Most Americans Say Social Media Companies Have Too Much Power, Influence in Politics", 22nd of July 2020, available on <https://www.pewresearch.org/short-reads/2020/07/22/most-americans-say-social-media-companies-have-too-much-power-influence-in-politics/>, accessed 29th of January 2025; A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op. cit.*, p. 380.

⁴⁴ A. BRADFORD, *ibid.*

⁴⁵ N. TIKU, "Big Tech: Breaking Us Will Only Help China", 23rd of May 2019, available on <https://www.wired.com/story/big-tech-breaking-will-only-help-china/>, accessed on 29th of January 2025.

⁴⁶ "The EU Wants to Set the Rules for the World of Technology", 20th of July 2020, available on <https://www.economist.com/business/2020/02/20/the-eu-wants-to-set-the-rules-for-the-world-of-technology>, accessed 29th of January 2025.

of metrics indicate that the EU currently exhibits a technological deficit in comparison to the United States. European firms demonstrate lower profitability, growth, and innovation in comparison to their US counterparts, thus contributing to a substantial technology gap.⁴⁷ Concurrently, the EU has assumed the role of the world's regulatory driving force. While consumers may not be able to name any leading European tech companies, most have likely heard about the General Data Protection Regulation (GDPR). Consequently, while the EU may not be capable of generating the world's leading tech companies, it has demonstrated its capacity to establish regulations to govern these companies.⁴⁸ Despite the existence of a transatlantic technology gap, the question of whether EU technology regulations are responsible for the foundation of today's tech giants in the United States rather than the EU remains debated. This prevailing view may oversimplify the relationship between innovation and digital regulation, and reflects several misunderstandings about the strengths and weaknesses of the European and American regulatory regimes and their respective tech ecosystems.⁴⁹ A more thorough examination reveals that the EU's failure to nurture a comparably prosperous tech industry is attributable to a multitude of factors, including: the absence of a proactive immigration policy that would allow the EU to harness foreign tech talents, the fragmented Digital Single Market – which limits the scaling of innovations within the EU – and Europe's punitive bankruptcy laws and cultural attitudes that deter risk-taking underdeveloped capital markets.⁵⁰ Concurrently, these factors are intrinsic strengths of the US legal regime and tech ecosystem.⁵¹

3.1. Digital regulation in the United States

The US digital regulation approach is characterised by a steadfast belief in the efficiency of markets and a concomitant reluctance to impose stringent regulatory measures.⁵² This regulatory model is indicative of the nation's deeply ingrained techno-optimism, whereby confidence is placed in the capacity of tech companies to self-regulate.⁵³ According to this American techno-libertarian perspective, government intervention is viewed as detrimental to the efficient operation of markets and as a threat to individual liberty and societal progress, and should therefore remain minimal. The US' commitment to innovation and growth provides the economic rationale against government intervention, whilst its commitment to individual liberty and freedom is invoked as a political reason to limit the government's role in the digital economy.⁵⁴ The US free-market ideology can be illustrated with § 230 of the Communications Decency Act of 1996. This piece of legislation offers legal protection to online intermediaries and shield these companies from liability for any third-party content that they host on their platforms.⁵⁵ If YouTube were to remove an illegal video or Meta were to delete a defamatory post, these actions would not infringe upon the user's right to free speech. This immunity, which safeguards platforms' actions and inactions alike, has been regarded as crucial for the growth and development of online services.⁵⁶

In contrast to the majority of other countries worldwide that have recently adopted data privacy laws, no comprehensive federal privacy law has been instigated.⁵⁷ Furthermore, the dated antitrust statutes, which are

⁴⁷ A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op. cit.*, p. 381.

⁴⁸ A. BRADFORD, *Digital Empires: The Global Battle To Regulate Technology*, *op. cit.*, pp. 111, 116, 124.

⁴⁹ A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op. cit.*, p. 382.

⁵⁰ *Ibid.*, N. SMUHA, "European Sovereignty: A Union Seeking to Control its own Destiny", *op. cit.*, pp. 136 – 148.

⁵¹ *Ibid.*

⁵² CLINTON WHITE HOUSE, "Read the Framework", available on <https://clintonwhitehouse4.archives.gov/WH/New/Commerce/read.html>, accessed 29th of January 2025.

⁵³ A. BRADFORD, *Digital Empires: The Global Battle To Regulate Technology*, *op. cit.*, pp. 33-36.

⁵⁴ A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op. cit.*, p. 387.

⁵⁵ V. BRANNON and E. HOLMES, Section 230: An Overview, 1st of April 2024, *Congress.Gov*, available on <https://www.congress.gov/crs-product/R46751>, accessed 9th of May 2024.

⁵⁶ D. CITRON and M. FRANKS, "The Internet as a Speech Machine and Other Myths Confounding Section 230 Reform", *Boston University School of Law: Research Paper n°20-8*, 2022, p. 15.

⁵⁷ M. MCCLUSKEY, "After a Year of Focus on Big Tech Harms, Why We're Still Waiting on Reform", available on <https://time.com/6212145/big-tech-reforms-us-free-speech/>, accessed 3rd of February 2025; DLA PIPERS, "Data protection laws in the United States", 6th February 2025, available on

viewed by many as inadequate for addressing the challenges of the contemporary digital economy, have not been updated either.⁵⁸ Additionally, no measures have been taken to protect the rights of gig workers or impose obligations on platforms to share revenue with creators of copyright-protected content.⁵⁹ The US' ideological dedication to free markets, in conjunction with unrelenting corporate lobbying and legislative inefficiencies, may provide a rationale for the nation's restraint in regulating its technology sector.⁶⁰ This minimalist legislative framework stands in stark contrast to the legislative activity of the EU, which has regulated extensively across many domains of the digital economy. However, before delving into the analysis of Europe's approach regarding digital regulation, it is worth mentioning that, even if our discussion does not address China's tech regulation, its regulatory posture has, until recently, been analogous to that of the US with respect to the maximisation of Chinese tech companies' capacity for growth and innovation, largely free from regulatory constraints.⁶¹

3.1.1 *The current vision of the United States regarding the regulation of AI*

Regarding AI, the White House revoked Biden's Executive Order (EO) 14110 on the 20th of January 2025 and adopted a new one on the 23rd of January 2025 in order to: "*Remove barriers to American leadership in artificial intelligence*".⁶² While Biden's EO emphasised oversight, ethical safeguards, risk mitigation, civil rights and accountability in AI design, the new EO centers on deregulation, economic competitiveness, and minimising federal intervention. Framing AI development as a matter of national strength and global leadership, the new EO prioritises policies that remove perceived regulatory obstacles to innovation, and explicitly criticizes "*engineered social agendas*"⁶³ in AI and calls for systems free of "*ideological bias*".⁶⁴

The first core difference relates to global AI leadership. Biden's EO underscored multilateral engagement, urging collaboration with allies and global bodies to shape shared safety and ethics standards. The new EO adopts a unilateral stance, asserting American leadership without articulating any commitment to international coordination or governance frameworks.⁶⁵

Second, Biden's EO established an oversight infrastructure, focusing on: mandatory red-teaming of high-risk AI models, cybersecurity standards and interagency collaboration on safety protocols. In contrast, the new EO mandates an immediate review – and potential repeal – of all Biden-era AI policies that may obstruct innovation and contrary to the vision of the new presidential administration. In addition, rather than instituting federal oversight, it relies on the private sector's presumed agility to drive responsible innovation.⁶⁶

Third, Biden's EO emphasised workforce development through investments in AI education, expanded visa access for skilled workers, and public-private partnerships for AI research and development. The new EO omits

<https://www.dlapiperdataprotection.com/?t=law&c=US#:~:text=United%20States%20privacy%20law%20is,biometrics%2C%20and%20communications%20privacy%20laws>, accessed 9th of May 2025.

⁵⁸ A. KLOBUCHAR, "Klobuchar reintroduces Bill to Promote Competition and Improve Antitrust Enforcement", 16th of January 2025, available on <https://www.klobuchar.senate.gov/public/index.cfm/2025/1/klobuchar-reintroduces-bill-to-promote-competition-and-improve-antitrust-enforcement>, accessed 3rd of February 2025.

⁵⁹ A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op. cit.*, p. 388.

⁶⁰ *Ibid.*

⁶¹ *Ibid.*, p. 387; A. ZHANG, "Agility over Stability: China's Great Reversal in Regulating the Platform Economy", *H.I.L.J.*, 2022, Vol. 63.

⁶² Executive Order 14719 of January 23, 2025, "Removing Barriers to American Leadership in Artificial Intelligence", *Federal Register*, 31st of January 2025, Vol. 90, No. 20.

⁶³ *Ibid.*, Section 1.

⁶⁴ *Ibid.*; P. CARRILLO *et al.*, "Key Insights on President Trump's New AI Executive Order and Policy & Regulation Implications", *Squire Patton Boggs*, February 2025, available on <https://www.squirepattonboggs.com/en/insights/publications/2025/02/key-insights-on-president-trumps-new-ai-executive-order-and-policy-regulatory-implications>, accessed 9th of May 2025.

⁶⁵ P. CARRILLO *et al.*, "Key Insights on President Trump's New AI Executive Order and Policy & Regulation Implications", *op. cit.*

⁶⁶ *Ibid.*

such provisions, reflecting a belief that deregulation will organically attract talent and promote growth in the private sector without direct federal involvement.⁶⁷

Four, both EOs treat AI as a national security issue, but through differing mechanisms. Biden's EO required detailed risk assessments by federal agencies, such as the Departments of Energy and Defense, concerning AI's misuse in biosecurity and cyberinfrastructure. On the contrary, the new EO narrows this focus and emphasises streamlined governance, minimal federal oversight and a more flexible regulatory environment, all seen as essential to maintaining US technological leadership for national security purposes.⁶⁸

Finally, the most pronounced ideological divergence relates to the treatment of civil rights and equity. Biden's EO embedded civil rights considerations throughout, mandating assessments of AI's impact on discrimination, particularly in hiring, healthcare, and law enforcement. The new EO dismisses this emphasis, asserting that existing discrimination laws⁶⁹ are sufficient.⁷⁰

3.1.2 *Regulatory divergence in transatlantic AI governance*

The January 2025 Executive Order issued by the White House represents a decisive policy shift in the United States' approach to AI governance, which raises questions regarding: the coherence of US AI governance, the role of federal versus state regulatory competence, and the position of the United States within the emerging global legal framework for AI.

The US deregulatory orientation stands in stark contrast to other jurisdictions – most notably the European Union⁷¹ – at a time where other states are advancing on their own AI regulatory frameworks and policies. Indeed, several countries are developing their own national AI strategies, which are more closely aligned with the EU's emphasis on accountability and ethical governance than with the US's deregulatory posture.⁷² However, even though many countries agree on the importance of promoting ethical uses of AI, the regulatory models followed vary. Some, such as Brazil, have drawn strong inspiration from the EU AI Act and its risk-based approach, aiming to establish comprehensive frameworks that impose strict obligations on high-risk AI systems.⁷³ In contrast, others like Japan and the United Kingdom have opted for more flexible regulatory strategies relying on technologically neutral, sector-specific legislations and voluntary industry guidelines, rather than adopting broad, restrictive statutes.⁷⁴

This divergence in regulatory philosophy is likely to create tensions between the US and EU frameworks, particularly for multinational corporations operating across both regions. While the EU's stringent rules have been criticized for potentially stifling innovation, the absence of comparable ethical and risk mitigation safeguards in the new EO could hinder the competitiveness of US companies in the European market, where compliance with the AI Act's rigorous standards is a legal prerequisite for access.⁷⁵ The White House's

⁶⁷ *Ibid.*

⁶⁸ *Ibid.*

⁶⁹ See e.g., Title VI and Title VII of the Civil Rights Act and the Americans with Disabilities Act.

⁷⁰ P. CARRILLO *et al.*, "Key Insights on President Trump's New AI Executive Order and Policy & Regulation Implications", *op. cit.*

⁷¹ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024; Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final.

⁷² P. CARRILLO *et al.*, "Key Insights on President Trump's New AI Executive Order and Policy & Regulation Implications", *op. cit.*

⁷³ D. ATANASOVSKA and L. ROBELI, "Brazil's AI Act: A New Era of AI Regulation", 26th of February 2025, *GDPR Local*, available on <https://gdprlocal.com/brazils-ai-act-a-new-era-of-ai-regulation/>, accessed 9th of May 2025

⁷⁴ M. GRAHAM and E. KIM, "Japan's Approach to AI Regulation in 2025", 14th of April 2025, *Lexology*, available on <https://www.lexology.com/library/detail.aspx?g=f17a68e4-c0cb-4a26-bb1f-6795290f94df>, accessed 9th of May 2025; R. SUN, "Global AI Regulation Tracker: United Kingdom", available on <https://www.techieray.com/GlobalAIRegulationTracker>, accessed 9th of May 2025.

⁷⁵ P. CARRILLO *et al.*, "Key Insights on President Trump's New AI Executive Order and Policy & Regulation Implications", *op. cit.*

revocation of Biden's EO and its preference for a "*clean slate*"⁷⁶ approach may also undermine broader international efforts to establish shared standards for AI governance. While the EU, the G7, and other international bodies are working to forge consensus around core principles such as fairness, transparency, and safety, the US' shift towards deregulation could reduce its influence in shaping these global norms. This approach risks creating the perception that the US is prioritising immediate technological gains over long-term ethical and societal concerns, which may alienate key allies and diminish the country's leadership in global AI diplomacy.⁷⁷ Domestically, the new EO could further exacerbate the growing disparity between federal and state approaches to AI regulation. While states such as California⁷⁸ and Connecticut⁷⁹ have shown hesitation in enacting their own AI legislations, others – including Colorado⁸⁰, Utah⁸¹, Tennessee⁸² and Illinois⁸³ – enacted their own, each with varying scopes and regulatory scrutiny. As seen with state-level data privacy legislation⁸⁴, this trend is likely to result in regulatory fragmentation, with different jurisdictions implementing inconsistent rules on high-risk AI applications, transparency obligations, and sector-specific safeguards.⁸⁵

In the absence of comprehensive federal legislation, businesses will be left navigating a complex and evolving patchwork of state-level AI regulations. Should Congress eventually pass a federal AI law that prioritises innovation over risk management, it may preempt more stringent state-level initiatives. Until then, organisations will need to closely monitor developments at both the state and federal levels⁸⁶ to ensure legal compliance across multiple jurisdictions.⁸⁷ Ultimately, the effectiveness of the new presidential administration's AI policy will be judged by whether it sustains US leadership in the global AI race or inadvertently allows other powers to gain strategic ground. While the deregulatory approach may accelerate domestic innovation and investment⁸⁸, China's potential alignment with international AI governance frameworks could strengthen its position as a global standard-setter. Whether China's AI advancement – exemplified by developments such as DeepSeek –

⁷⁶ *Ibid.*

⁷⁷ *Ibid.*

⁷⁸ R. AZIM-KHAN *et al.*, "Gov. Newsom Vetoes AI Bill but Leaves the Door Open to Future CA Regulation", *Crowell & Moring*, 10th of February 2024, available on <https://www.crowell.com/en/insights/client-alerts/gov-newsom-vetoes-ai-bill-but-leaves-the-door-open-to-future-ca-regulation>, accessed 9th of May 2025.

⁷⁹ W. BOSWORTH, "Sweeping Artificial Intelligence Bill Stalls in House", 5th of September 2024, *cbia*, available on <https://www.cbia.com/news/issues-policies/sweeping-artificial-intelligence-bill-stalls/>, accessed 9th of May 2025; K. DIXON, "Why Connecticut has been slow to adopt AI regulations", 7th of April 2025, *ctpost*, available on <https://www.ctpost.com/politics/Article/connecticut-governor-state-senator-still-far-20254560.php>, accessed 9th of May 2025.

⁸⁰ Senate Bill 24-205, Concerning consumer protection in interactions with artificial intelligence; T. CHUANG, "Attempt to tweak Colorado's controversial, first-in-the-nation artificial intelligence law is killed", 5th of May 2025, *The Colorado Sun*, available on <https://coloradosun.com/2025/05/05/colorado-artificial-intelligence-law-killed/#:~:text=Senate%20Bill%20318%20was%20tabled,effect%20Feb.%201%2C%202026>, accessed 9th of May 2025.

⁸¹ A. BAHOU and E. ILLMAN, "Understanding the Utah AI Act and Newly Effective Amendments: What Your Business Needs to Know", 9th of May 2025, *Lexology*, available on <https://www.lexology.com/library/detail.aspx?g=601e9694-5cc6-438e-93b8-ee7b268303b6>, accessed 9th of May 2025.

⁸² House Bill 2091, An Act to amend Tennessee Code Annotated, Title 39, Chapter 14, Part 1 and Title 47, relative to the protection of personal rights; B. LEE, "Tennessee First in the Nation to Address AI Impact on Music Industry", 10th of January 2024, *Office of the Governor*, available on <https://www.tn.gov/governor/news/2024/1/10/tennessee-first-in-the-nation-to-address-ai-impact-on-music-industry.html>, accessed 9th of May 2025; M. SZEWCZYK and L. AMODIO, "Artificial Intelligence and Copyrights: Tennessee's ELVIS Act Becomes Law", 27 of March 2024, available on <https://www.armstrongteasdale.com/thought-leadership/artificial-intelligence-and-copyrights-tennessees-elvis-act-becomes-law/>, accessed 9th of May 2024.

⁸³ ILLINOIS GENERAL ASSEMBLY, Bill Status of HB3773; C. HARRIS, A. KOUINIAN and K. MILLER, Illinois passes artificial intelligence (AI) law regulating employment use cases, 9th of September 2024, *Mayer/Brown*, available on <https://www.mayerbrown.com/en/insights/publications/2024/09/illinois-passes-artificial-intelligence-ai-law-regulating-employment-use-cases>, accessed 9th of May 2025.

⁸⁴ DLA PIPERS, "Data protection laws in the United States", *op. cit.*

⁸⁵ P. CARRILLO *et al.*, "Key Insights on President Trump's New AI Executive Order and Policy & Regulation Implications", *op. cit.*

⁸⁶ R. PENTI and J. ZHANG, White House Issues Guidance on Use and Procurement of Artificial Intelligence Technology, 14th of April 2025, *Ropes&Gray*, available on <https://www.ropesgray.com/en/insights/alerts/2025/04/white-house-issues-guidance-on-use-and-procurement-of-artificial-intelligence-technology>, accessed 9th of May 2025; R. BURNETTE *et al.*, March 2025 AI Developments Under the Trump Administration, 16th of April 2025, *Covington*, available on <https://www.insidegovernmentcontracts.com/2025/04/march-2025-ai-developments-under-the-trump-administration/>, accessed 9th of May 2025.

⁸⁷ P. CARRILLO *et al.*, "Key Insights on President Trump's New AI Executive Order and Policy & Regulation Implications", *op. cit.*

⁸⁸ V. PIETROMARCHI, Stargate: What is Trump's new \$500bn AI Project?, 22 January 2025, *Aljazeera*, available on <https://www.aljazeera.com/news/2025/1/22/stargate-what-is-trumps-new-500bn-ai>, accessed 9th of May 2025.

is merely a temporary challenge or a harbinger of long-term strategic displacement remains an open and critical question.⁸⁹

3.2. Digital regulation in the European Union

The European Union recognises that the innovative products and services of tech companies generate significant benefits for individuals and society, and that their development should therefore be encouraged.⁹⁰ Concurrently, the European approach towards the tech industry reflects concerns that the digital transformation has resulted in an economy with excessive concentration, in which a small number of powerful tech firms possess substantial economic wealth and political power.⁹¹ With their economic power, these companies have the capacity to abuse their market dominance and restrict competition, which has a detrimental effect on their rivals and consumers.⁹² Additionally, these companies have become platforms for disinformation, hate speech, and other content that is deemed unacceptable by many, therefore undermining the safety and dignity of individuals, while also dividing societies and destabilising democracies.⁹³ Furthermore, these firms have been accused of violating individuals' rights to data privacy by extracting vast amounts of data on their users' private lives and commercialising such information through targeted advertising.⁹⁴ Considering the aforementioned issues, the EU has undertaken comprehensive regulatory initiatives over the preceding decade by implementing a series of legal provisions which impose constraints on the business models of tech companies. The EU seeks to protect the fundamental right to data privacy through the 2016 GDPR.⁹⁵ Moreover, it aims to limit the market power of dominant tech companies through the active enforcement of antitrust laws, complemented in 2022 by the DMA,⁹⁶ which is a significant piece of legislation that aims to enhance market competition by restricting certain business practices by digital gatekeepers deemed to be anticompetitive.⁹⁷ The EU has established a regulatory framework for online content, encompassing a range of instruments such as the 2019 Copyright Directive and the 2021 Regulation on terrorist content. The EU has implemented codes of conduct targeting disinformation and hate speech,⁹⁸ paving the way for the overarching regulation of online intermediaries, as evidenced in 2022 by the DSA.⁹⁹ Furthermore, the EU's ambitious and comprehensive AI Act was adopted in 2024,¹⁰⁰ and the labour rights of platform workers was enhanced with a Directive in October 2024.¹⁰¹

A close analysis of the numerous digital regulations reveals a common focus on the enhancement of rights, encompassing the fundamental rights of internet users, the democratic rights of digital citizens, the social rights

⁸⁹ P. CARRILLO *et al.*, "Key Insights on President Trump's New AI Executive Order and Policy & Regulation Implications", *op. cit.*

⁹⁰ 2023 Report on the state of the digital decade, 27th of September 2023, available on <https://digital-strategy.ec.europa.eu/en/library/2023-report-state-digital-decade>, accessed 3rd of February 2025.

⁹¹ Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector, *O.J.E.U.*, L.265/1, 12th of October 2022, pp. 1-2.

⁹² *Ibid.*

⁹³ A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op. cit.*, p. 388;

T. GILLESPIE, *Custodians on the Internet: Platforms, Content Moderation, and the Hidden Decisions that Shape Social Media*, Yale University Press, 2018.

⁹⁴ *Ibid.*, S. ZUBOFF, *The Age of Surveillance Capitalism: The Fight For a Human Future at the New Frontier of Power*, Profile Books Ltd, 2019.

⁹⁵ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, *O.J.E.U.*, L.119/1, 4th of May 2016.

⁹⁶ Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector, *O.J.E.U.*, L.265/1, 12th of October 2022.

⁹⁷ *Ibid.*

⁹⁸ Directive (EU) 2019/790 of the European Parliament and of the Council of 17 April 2019 on copyright and related rights in the Digital Single Market, *O.J.E.U.*, L.130/92, 17th of May 2019.

⁹⁹ Regulation (EU) 2021/784 of the European Parliament and of the Council of 29 April 2021 on addressing the dissemination of terrorist content online, *O.J.E.U.*, L.172/79, 17th of May 2021.

¹⁰⁰ Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services, *O.J.E.U.*, L.277/1, 27th of October 2022.

¹⁰¹ Directive (EU) 2024/2831 of the European Parliament and of the Council of 23 October 2024 on improving working conditions in platform work, *O.J.E.U.*, 11th of November 2024.

of platform workers, and the various economic rights of smaller market actors. The EU's extensive digital agenda is underpinned by the conviction that markets, left to their own devices, will not yield optimal outcomes, and that government intervention is necessary to preserve and strengthen these rights.¹⁰² Europe is concerned that tech firms do not fully comprehend the implications that technology has on individuals' fundamental rights and democratic institutions, which are frequently undermined by their products and services.¹⁰³ Thus, the EU perceives a necessity for regulation of the digital economy to ensure that it is rights-preserving, democracy-enhancing, and ultimately capable of distributing the benefits of the digital transformation more widely and fairly.¹⁰⁴ The EU's pro-regulation policy is not confined to the technology sector and reflects of a more comprehensive perspective on market operations and the ideal function of governments. In comparison with the United States, the state is held in higher esteem by the public in the EU, which results in a more significant role in the regulation of markets.¹⁰⁵ According to the influential literature on varieties of capitalism, the majority of European countries exhibit characteristics of a coordinated market economy rather than a liberal market economy. This suggests that they allocate a greater role to government regulation and non-market institutions.¹⁰⁶ This perspective was recently articulated by Andreas Schwab, a Member of the European Parliament and the Parliament's chief negotiator for the DMA, during his remarks on the DMA's passage through Parliament. He emphasised that: *"The EU will enforce the rules of the social market economy also in the digital sphere, and this means that lawmakers dictate the rules of competition, not digital giants."*¹⁰⁷

The EU's regulatory philosophy, driven by a strong commitment to rights-based principles, reflects an ideological dedication to fostering a human-centric digital economy and has substantial backing from the European citizenry.¹⁰⁸ This public support has bestowed upon the EU's regulatory agenda both democratic legitimacy and political momentum, a trend that has remained intact despite extensive lobbying by the tech industry.¹⁰⁹ The political environment within the European Union has been identified as a contributing factor to the widespread implementation of regulatory measures. In comparison to their American counterparts, political parties across the ideological spectrum in Europe may vary in their level of support for regulatory measures, but a shared commitment to a regulated market economy remains prevalent.¹¹⁰ The DMA serves as a notable illustration of this prevailing political consensus. Indeed, this piece of legislation was adopted in the European Parliament with 588 votes in favour, 11 against, and 31 abstentions, with parties across the political spectrum lending resounding support.¹¹¹ This degree of consensus is indicative of Europe's faith that governments, rather than technology companies, ought to assume the role of guardians of the digital economy.¹¹²

¹⁰² A. BRADFORD, "Europe's Digital Constitution", *Columbia Law School: Scholarship Archive*, 2023, pp. 11 – 13.

¹⁰³ P. NEMITZ, "Constitutional Democracy and Technology in the Age of Artificial Intelligence", *Royal Society Philosophical Transactions*, 2018, pp. 11 – 15.

¹⁰⁴ A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op. cit.*, p. 392.

¹⁰⁵ S. GUBBALA, "People Broadly View the EU Favorably, Both in Member States and Elsewhere", 24th October 2023, available on <https://www.pewresearch.org/short-reads/2023/10/24/people-broadly-view-the-eu-favorably-both-in-member-states-and-elsewhere/>, accessed 3rd of February 2025.

¹⁰⁶ A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op. cit.*, p. 392; P. HALL and D. SOSKICE, *Varieties of Capitalism: The Institutional Foundations of Comparative Advantage*, Oxford University Press, 2001, p. 8.

¹⁰⁷ "Digital Market Act: Parliament Ready to Start Negotiations with Council", 2021, available on <https://www.europarl.europa.eu/news/en/press-room/20211210IPR19211/digital-markets-act-parliament-ready-to-start-negotiations-with-council>, accessed 3rd February 2025.

¹⁰⁸ A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op. cit.*, p. 392.

¹⁰⁹ A. SATRIANO and M. STEVIS-GRIDNEFF, "Big Tech Turns its Lobbyists Loose on Europe, Alarming Regulators", 14th December 2020, available on <https://www.nytimes.com/2020/12/14/technology/big-tech-lobbying-europe.html>, accessed 3rd of February 2025.

¹¹⁰ A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op. cit.*, p. 393.

¹¹¹ 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", *Legislative Train Schedule*, available on <https://www.europarl.europa.eu/legislative-train/theme-a-europe-fit-for-the-digital-age/file-digital-services-act#:~:text=Parliament%20approved%20the%20final%20text,illegal%20content%2C%20goods%20and%20services>, accessed 3rd of February 2025.

¹¹² A. BRADFORD, "The False Choice Between Digital Regulation and Innovation", *op. cit.*, p. 393.

4. The European liability framework

4.1. The need to adapt liability rules to AI

AI is gaining ground in our daily lives, and so is academic research into its impact on various areas of the law.¹¹³ One of the areas that has attracted much attention is extra-contractual or tort liability. AI has caused and will eventually cause damage again, either by following certain actions or decisions, or by providing incorrect information that causes damage (e.g. when AI used in construction leads to the collapse of a building, injuring a bystander). Accidents involving autonomous vehicles can be cited¹¹⁴ as the autopilot of a Tesla car has already led to a fatal crash because it was unable to distinguish a white tractor-trailer crossing the road from the bright sky above. These cases depict the risk of accidents, despite the optimisation of national and supranational safety regulations for AI.¹¹⁵

Recently, several initiatives have been taken or discussed at EU level regarding liability for damage caused by AI. The European Parliament published a resolution on civil law rules for robots in 2017 and urged the European Commission to consider a legislative instrument that would address liability for damage caused by autonomous systems and robots, assessing the feasibility of a strict liability or a risk management approach.¹¹⁶ This initiative was followed by the publication of a report by an expert group set up by the Commission on "*Liability for artificial intelligence and other emerging digital technologies*" in November 2019. The report examined the main liability challenges to current tort law by AI and concluded that: "(...) *liability regimes in force in Member States ensure at least a basic level of protection for victims whose harm is caused by the operation of such new technologies*".¹¹⁷ Nevertheless, the particular characteristics of AI systems – such as their complexity, opacity, self-learning capabilities and limited predictability – make it difficult to compensate victims in all cases where it appears justified.¹¹⁸ The report also highlights that the allocation of liability may be unfair or inefficient and makes several recommendations to address potential gaps in EU and national liability regimes.¹¹⁹ The Commission then responded with a White Paper on AI in 2020 dedicated to the development of a European approach based on excellence and trust.¹²⁰ In addition, the White Paper was accompanied by a report on safety and liability that identified a number of issues that needed further attention, such as: the clarification of the scope of the Product Liability Directive or the assessment of procedural aspects (e.g. identifying the liable person, proving the conditions for a liability claim or access to the AI system to substantiate the claim).¹²¹

In October 2020, the European Parliament issued a resolution with recommendations to the European Commission on a civil liability regime for AI, advocating strict liability for operators of high-risk AI systems and fault-based liability for operators of non-high-risk AI systems, with a reversal of the burden of proof.¹²² In April 2021, the draft version of the AI Act was published and the amended Act entered into force in August 2024. The AI Act follows a risk-based approach and mainly focuses on banning AI systems that are considered as

¹¹³ J. TURNER, *Robot Rules: Regulating Artificial Intelligence*, Palgrave Macmillan, 2018; M. LAVY and M. HERVEY, *Law of Artificial Intelligence*, Sweet & Maxwell, 2021; J. DE BRUYNE and C. VANLEENHOVE, *Artificial Intelligence and the Law*, Larcier, 2023.

¹¹⁴ J. DE BRUYNE and J. TANGHE, "Liability for damage cause by autonomous vehicles: a Belgian perspective", *J.E.T.L.*, 2017, Vol. 8, n°3, p. 324.

¹¹⁵ J. BOGAGE, "Tesla driver using autopilot killed in crash", *The Washington Post*, 30th of June 2016, accessed 26th of February 2025.

¹¹⁶ EUROPEAN PARLIAMENT, "Resolution of 16 February 2017 with recommendations to the Commission on Civil Law Rules on Robotics".

¹¹⁷ EXPERT GROUP ON LIABILITY AND NEW TECHNOLOGIES – NEW TECHNOLOGIES FORMATION, "Liability for Artificial Intelligence", 2019, p. 3.

¹¹⁸ J. DE BRUYNE and W. OOMS, "Tort Liability and Artificial Intelligence - Some Challenges and (Regulatory) Responses", in *The Cambridge Handbook of the Law, Ethics, and Policy of Artificial Intelligence* (under the dir. of N. SMUHA), Cambridge University Press, 2025, p. 161.

¹¹⁹ EXPERT GROUP ON LIABILITY AND NEW TECHNOLOGIES – NEW TECHNOLOGIES FORMATION, "Liability for Artificial Intelligence", *op. cit.*, pp. 3 – 9.

¹²⁰ EUROPEAN COMMISSION, "White Paper on Artificial Intelligence – A European approach to excellence and trust", COM(2020) 65 final.

¹²¹ *Ibid.*, p. 17.

¹²² European Parliament resolution of 20 October 2020 with recommendations to the Commission on a civil liability regime for artificial intelligence, C 404/107, art. 4.

"unacceptable risks"¹²³ and imposing *ex-ante* obligations on "high-risk AI systems".¹²⁴ The AI Act created obligations for various parties, such as providers and deployers of high-risk AI systems, that will be important when assessing the liability of those parties and determining whether or not they committed a fault.¹²⁵ More importantly, in September 2022, the European Commission published two proposals designed to adapt liability rules to the digital age, the circular economy and the consequences of the global value chain. On one side, the AI Liability Directive includes rules designed to ease the burden of proof for fault-based, non-contractual civil liability for AI-induced harms.¹²⁶ On the other side, the Revised Product Liability Directive substantially amends the current EU product liability regime by including software within its scope, introducing new circumstances for evaluating product defectiveness, and introducing rules on presumptions of defectiveness and causation.¹²⁷ The final version of the rPLD was formally adopted by the European Parliament and the Council on 23 October 2024.¹²⁸ It was subsequently published in the Official Journal of the European Union on 18 November 2024 and entered into force twenty days later.¹²⁹ Member States are required to transpose the Directive into their national legal systems by 9 December 2026.¹³⁰ In the meantime, the 1985 PLD will remain applicable to products placed on the market or put into service before that date and will be officially repealed as of 9 December 2026.¹³¹

4.2. The different forms of liability

Liability laws define the legal framework for determining who bears responsibility when harm is caused. Three primary doctrines underpin this framework: fault-based liability, strict liability and no-fault liability.¹³²

4.2.1 Fault-based liability

The widespread adoption of fault-based liability is largely attributed to its perceived fairness: liability is contingent upon establishing negligence, thereby ensuring that only those who have acted without due care are held responsible for resulting harm. As a result, in situations where no clear fault can be attributed, the burden of loss typically falls on the victim. From an incentives-based perspective, fault-based liability serves a dual function. It motivates actors involved in potentially harmful activities – such as the development or deployment of AI systems – to exercise proper caution, as they may avoid liability by demonstrating that they took all reasonable measures. At the same time, it encourages prospective victims to act prudently, as they also have a stake in preventing accidents.¹³³

However, this model presents notable challenges when applied to AI systems and the broader AI value chain. One significant difficulty lies in proving whether a party did or did not meet the requisite standard of care.¹³⁴ Courts and claimants may face informational asymmetries which hinder their ability to assess whether adequate

¹²³ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024, art. 5.

¹²⁴ *Ibid.*, art. 6.

¹²⁵ J. DE BRUYNE, G. THOMAS and E. VAN GOOL, "Tort Law and Damage cause by AI Systems", in *Artificial Intelligence and the Law* (under the dir. of J. DE BRUYNE), Intersentia, 2022, pp. 407 – 408; J. DE BRUYNE and W. OOMS, "Tort Liability and Artificial Intelligence - Some Challenges and (Regulatory) Responses", *op. cit.*, p. 161.

¹²⁶ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final.

¹²⁷ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024.

¹²⁸ Legislative Observatory, 2022/0302 (COD) – Liability for defective products, available on [https://oeil.secure.europarl.europa.eu/oeil/en/procedure-file?reference=2022/0302\(COD\)](https://oeil.secure.europarl.europa.eu/oeil/en/procedure-file?reference=2022/0302(COD)), accessed 9th of May 2025.

¹²⁹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 23.

¹³⁰ *Ibid.*, art. 22.1.

¹³¹ *Ibid.*, art. 21.

¹³² B. BOTERO ARCILA, *AI Liability Along the Value Chain*, Mozilla, 2025, pp. 26 – 27.

¹³³ *Ibid.*

¹³⁴ M. BUITEN, A. DE STREEL and M. PEITZ, "The law and economics of AI liability", *C.L.S.R.*, 2023, Vol. 48., pp. 12 – 13.

precautions were taken and to establish a causal link between a specific negligent act and the resulting harm, particularly given the complexity and technical opacity of AI systems.¹³⁵ These evidentiary challenges render litigations under a fault-based regime potentially protracted, costly, and uncertain. In this context, a strict liability framework may provide greater legal predictability and ease of enforcement.¹³⁶

4.2.2 *Strict liability*

In contrast, strict liability requires victims to demonstrate only that the defendant's actions caused the harm, irrespective of whether the defendant exercised optimal care. This legal regime is generally considered exceptional and is typically reserved for activities that are inherently hazardous, even when conducted with due diligence. However, the scope of strict liability varies considerably across jurisdictions.¹³⁷ In many continental legal systems, for instance, individuals can be held liable for the conduct of persons or objects under their supervision – such as employees or vehicles – a concept commonly referred to as vicarious liability.¹³⁸

For the effective implementation of a strict liability regime to AI, it is necessary to distinguish two different models.¹³⁹ Illegitimate-harm models – such as cancer detection systems or autonomous vehicles – refer to AI systems that should not cause harm under normal operation. In contrast, legitimate-harm models are designed to generate outputs that will, by their nature, adversely affect individuals. Such models are prevalent in domains like credit scoring, insurance underwriting, and recruitment, where AI systems rank or select individuals based on predefined criteria. In these contexts, a considerable proportion of outcomes may produce unfavourable results for certain individuals. However, such outcomes do not necessarily constitute compensable harm as they represent the inherent consequences of selection or classification processes based on the input data. In such cases, operators should have the opportunity to prove that the system functioned as intended and that any resulting harm caused was justified, thereby potentially exempting them from liability.¹⁴⁰

Strict liability offers several advantages, particularly in the context of hazardous or high-risk activities. First, strict liability incentivizes actors to adopt robust safety measures, as they remain liable for harm regardless of their conduct. Second, this regime offers substantial benefits for victims – who are relieved of the often-difficult burden of proving negligence – as it is sufficient for claimants to establish a causal connection between the defendant's conduct and the harm suffered.¹⁴¹ This approach also obviates the need for costly and complex investigations into whether a duty of care was breached or whether a product was defective – a significant advantage in the context of AI, where the technical complexity of systems often renders judicial assessment both challenging and prone to error.¹⁴² Moreover, strict liability circumvents the reliance on the slow development of technical standards necessary to operationalise the duty of care.¹⁴³ Third, it encourages actors to internalize the full social cost of their activities. By bearing the risk of liability even when acting with care,

¹³⁵ B. BOTERO ARCILA, *AI Liability Along the Value Chain*, *op. cit.*, p. 27; M. BUITEN, A. DE STREEL and M. PEITZ, "The law and economics of AI liability", *op. cit.*; S. SHAVELL, "The Mistaken Restriction of Strict Liability to Uncommon Activities", *op. cit.*, p. 13.

¹³⁶ B. BOTERO ARCILA, *AI Liability Along the Value Chain*, *Ibid.*

¹³⁷ *Ibid.*, p. 28.

¹³⁸ EUROPEAN GROUP ON TORT LAW PRINCIPLES, *Principles of European Tort Law*, art., 6:102.

¹³⁹ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *Computer Law and Security Review*, 2023, Vol. 51, p. 31.

¹⁴⁰ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *European Parliamentary Research Service*, 2024, pp. 28 – 31.

¹⁴¹ Strict liability regimes are often accompanied by liability caps or other legal limitations designed to mitigate the heightened exposure faced by those who benefit from the use or deployment of the technology, See B. BOTERO ARCILA, *AI Liability Along the Value Chain*, *op. cit.*, p. 28; EXPERT GROUP ON LIABILITY AND NEW TECHNOLOGIES – NEW TECHNOLOGIES FORMATION, "Liability for Artificial Intelligence", *op. cit.*, p. 23.

¹⁴² S. WACHTER, "Limitations and loopholes in the EU AI Act and AI Liability Directives: what this means for the European Union, the United States, and beyond", *Yale Journal of Law and Technology*, 2024, Vol. 26(3), p. 671.

¹⁴³ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 30.

parties are incentivised to engage in potentially harmful activities only to the extent that they remain economically justifiable. This activity-level control mechanism helps reduce unnecessary exposure to risk and fosters a more balanced allocation of legal responsibility.¹⁴⁴ Yet the effectiveness of such incentives rests on several assumptions – such as the availability of adequate information or actors' rational decision-making – that are, at best, questionable in practice.¹⁴⁵

Despite its advantages, strict liability is not without limitations and potential drawbacks. First, strict liability is generally considered socially efficient in contexts where the underlying activity remains dangerous even after the adoption of reasonable precautions. In cases where the activity is not inherently hazardous, optimal levels of care can typically be achieved under a fault-based regime, which may result in lower overall costs associated with injuries and litigation.¹⁴⁶ Second, strict liability increases the private costs associated with engaging in an activity, which means that over-deterrence through strict liability could result in missed opportunities for innovation and improvements in public welfare, and may disincentive investment in AI or reduce the availability of venture capital for emerging technologies.¹⁴⁷ This issue is particularly salient for SMEs – which constitute a substantial proportion of AI companies within the EU – that are especially susceptible to the deterrent effects of potential litigation. Start-ups often rely on venture capital funding, which may be withdrawn or withheld in the face of legal uncertainty or ongoing lawsuits. Given that securing AI-related investment is already more challenging in the EU compared to the United States, imposing a strict liability regime could exacerbate these difficulties.¹⁴⁸ Some argue that these adverse effects on SMEs could be mitigated by exempting them from the application of truly strict liability provisions.¹⁴⁹ More broadly, the introduction of a strict liability regime may be perceived internationally as a hostile regulatory stance toward AI development and deployment in the EU. Such a belief risks generating a "*chilling effect*"¹⁵⁰ on innovation, potentially discouraging the provision of AI-based solutions in vital sectors such as healthcare and education. This concern is compounded by the AI Act, which has acquired a reputation in investment circles for posing significant regulatory hurdles, thereby further dampening venture capital interest.¹⁵¹ This narrative may be strategically employed to reinforce the idea that EU-based AI companies are less competitive than their international counterparts, in order to depress those firms' valuations and make them more attractive targets for acquisition.¹⁵² Third, strict liability may reduce incentives for victims or individuals under the defendant's control to act prudently, knowing that the defendant will bear liability irrespective of fault¹⁵³ – even if it can be mitigated to some extent through the recognition of contributory negligence as a valid defense, whereby a claimant's compensation may be reduced or denied if their own negligent conduct contributed to the harm suffered.¹⁵⁴ Finally, the implementation of a strict liability regime may stimulate greater demand for AI liability insurance, both from actors seeking to hedge against exposure and from potential victims seeking coverage. While the development of such insurance markets could

¹⁴⁴ S. SHAVELL, "The Mistaken Restriction of Strict Liability to Uncommon Activities", *op. cit.*, p. 13.

¹⁴⁵ *Ibid*; P. HÄCKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 30.

¹⁴⁶ S. SHAVELL, *Ibid*.

¹⁴⁷ M. BUITEN, A. DE STREEL and M. PEITZ, "The law and economics of AI liability", *op. cit.*, p. 11 – 13.

¹⁴⁸ P. HÄCKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 31.

¹⁴⁹ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 33.

¹⁵⁰ K.A CHAGAL-FEFERKORN, Am I an algorithm or a product: when products liability should apply to algorithmic decision-makers, *Stanford Law & Policy Review*, 2019, Vol. 30, pp. 61; 82.

¹⁵¹ P. HÄCKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 31.

¹⁵² L. JAROVSKY, "AI Compliance Challenges: Liability, Transparency and Fairness, with Philipp Häcker", YouTube, 27th of March 2025, available on <https://www.youtube.com/watch?v=7jicxDrSyTw>, accessed 13th of May 2025.

¹⁵³ M. BUITEN, A. DE STREEL and M. PEITZ, "The law and economics of AI liability", *op. cit.*, p. 11 – 13.

¹⁵⁴ B. BOTERO ARCILA, *AI Liability Along the Value Chain*, *op. cit.*, p. 29; S. SHAVELL, "The Mistaken Restriction of Strict Liability to Uncommon Activities", *op. cit.*, pp. 13 – 15.

lead to improved risk-sharing and compensation mechanisms, it may also introduce new administrative burdens, higher transaction costs, and the potential for increased (vexatious) litigation related to insurance disputes.¹⁵⁵ As such, policymakers and scholars must weigh these trade-offs carefully when considering the adoption or expansion of strict liability frameworks for AI-related harms.¹⁵⁶

4.2.3 No-fault liability

An alternative approach that has received comparatively limited attention from policymakers is that of a no-fault compensation regime. Such mechanisms are already in place in different states, most notably in the context of road traffic accidents. These regimes vary significantly in their design, particularly with regard to their sources of funding and their substantive scope, with some confined to specific sectors, and others that apply more broadly to general categories of harm.¹⁵⁷

In certain jurisdictions, such as Belgium, compensation is provided by insurers under predetermined conditions¹⁵⁸, whereas in others, such as New Zealand, the State administers a dedicated compensation fund.¹⁵⁹ These no-fault mechanisms present several advantages, especially when applied to AI-related incidents. The inherent complexities and evidentiary challenges associated with establishing liability in cases involving AI often render traditional redress mechanisms, such as fault-based or strict liability, inaccessible or ineffective for victims. In contrast, no-fault regimes are typically simpler to administer, offering greater transparency regarding both the scope of compensable harm and the quantum of compensation available.¹⁶⁰ Furthermore, they eliminate the need to resolve intricate questions of legal liability and substantially reduce the burden of proof on claimants.¹⁶¹

Nevertheless, one commonly cited criticism is the perceived lack of deterrent effect. Because responsible parties are not held personally liable for harm, they may be insufficiently incentivised to adopt risk-averse behaviours. This concern relates to the broader deterrence function traditionally attributed to tort law. However, empirical studies on the deterrence efficacy of no-fault regimes have produced inconclusive results. In fact, some evidence suggests that there is no significant increase in tortious conduct under no-fault systems, thereby calling into question the assumption that liability-based deterrence is invariably more effective.¹⁶²

4.2.4 Product liability

Within the EU, predominantly *ex-ante* product safety rules are structured across two legislative tiers. First, certain sector-specific instruments¹⁶³ govern particular categories of products. Second, in the absence of such tailored legislation, the General Product Safety Regulation (GPSR)¹⁶⁴ – designed to ensure that only safe

¹⁵⁵ S. SHAVELL, "Liability for Accidents", *NBER Working Paper Series*, 2005, pp. 9 – 11.

¹⁵⁶ B. BOTERO ARCILA, *AI Liability Along the Value Chain*, *op. cit.*, p. 29.

¹⁵⁷ E. MARCHISIO, "In Support of No-Fault Civil Liability Rules for Artificial Intelligence", *Social Sciences*, 2021, Vol. 1, pp. 16 – 17.

¹⁵⁸ Loi du 21 novembre 1989 relative à l'assurance obligatoire de la responsabilité en matière de véhicules automoteurs, art. 29bis, *B.M.*, 8 December 1989.

¹⁵⁹ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *CITIP Working Paper*, 2025, p. 57; C. CORKILL, No-Fault Compensation: the New Zealand Experience, in *Legal and Forensic Medicine* (under the dir. of R. BERAN), Springer, 2013, p. 661.

¹⁶⁰ S. VAN UYTSEL, "Different Liability Regimes for Autonomous Vehicles. One Preferable Above the Other?", in *Autonomous Vehicles: Business, Technology and Law* (under the dir. Of S. VAN UYTSEL and D. VASCONCELLOS), Springer, 2021, p. 851.

¹⁶¹ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*

¹⁶² *Ibid*; J. TURNER, *Robot Rules: Regulating Artificial Intelligence*, Palgrave Macmillan, 2018, p. 103.

¹⁶³ See for example, Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024; Regulation (EU) 2017/745 of the European Parliament and of the Council of 5 April 2017 on medical devices, *O.J.E.U.* L 117/1, 5th of May 2017; 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, *O.J.E.U.*, L 117/176, 5th of May 2025.

¹⁶⁴ Regulation (EU) 2023/988 of the European Parliament and of the Council of 10 May 2023 on general product safety, *O.J.E.U.*, L 135/1, 23rd of May 2025.

consumer products are placed on the market¹⁶⁵ – applies as a catch-all framework. Specifically, it imposes obligations on producers and distributors to proactively identify potential risks associated with their products, to inform consumers of such risks, and, where necessary, to withdraw hazardous products from the market.¹⁶⁶

The Product Liability Directive complements the GPSR by operating as an *ex-post* liability regime, targeting consumer products considered defective. While product liability is traditionally classified as a form of strict liability, many scholars argue that product liability regimes often incorporate elements of fault-based reasoning, depending on the interpretation of defectiveness. A defect is generally understood as a failure to meet the level of safety that the public is entitled to expect, considering the nature of the product, its intended use, and the state of scientific and technical knowledge at the time it was placed on the market.¹⁶⁷ However, its interpretation significantly influences the character of the liability regime: *“If courts assume a defect easily, product liability tends towards strict liability. Conversely, if proving a product is defective is difficult, product liability resembles a negligence rule.”*¹⁶⁸

Beyond the general considerations surrounding fault-based and strict liability, product liability law is frequently viewed as a suitable mechanism in cases where a single actor within the value chain is in the best position to prevent harm. This actor typically possesses superior information, technical capability, or control over product design and manufacturing processes.¹⁶⁹ For instance, an AI system provider with substantial market influence or technical expertise may be able to shape the conduct of other actors in the value chain, such as component manufacturers, developers, and data labelers. Within this framework, liability is often assigned to the party deemed the *“cheapest cost avoider”*¹⁷⁰, which is the actor best positioned to implement cost-effective harm prevention measures.¹⁷¹

Nevertheless, there may be circumstances in which the cheapest cost avoider is not the provider of the system, such as in situations where harm results from a defect in a component that is extremely difficult to detect. If liability is assigned to the AI provider, and if the component’s manufacturer anticipates that the provider will ultimately bear responsibility, the manufacturer may have diminished incentives to exercise optimal care.¹⁷² To address such concerns, some legal systems empower courts to identify the cheapest cost avoider on a case-by-case basis. However, this task is inherently complex and resource-intensive. Consequently, some scholars have proposed a more structured approach: assigning liability to a default party – such as the AI provider – and enabling them to redistribute liability through contractual arrangements with other actors in the value chain in order to align liability with actual control and capacity to prevent harm, while reducing the informational burdens on the judiciary institutions.¹⁷³

4.3. From PLD to rPLD

The PLD was adopted in 1985 and aims to ensure that producers are liable for the damage caused to individuals by their defective products.¹⁷⁴ The idea of the 1985 PLD is to provide a maximally harmonised framework through which Member States can deal with liability and remedy the damage caused by products. Therefore,

¹⁶⁵ *Ibid.*, art. 1.

¹⁶⁶ *Ibid.*, art. 35.

¹⁶⁷ *Ibid.*, art. 6.

¹⁶⁸ M. BUITEN, “Product liability for defective AI”, *European Journal of Law and Economics*, 2024, Vol. 57, p. 240.

¹⁶⁹ C. SHARKEY, “A Products Liability Framework for AI”, *Columbia Science and Technology Law Review*, 2024, Vol. 25, pp. 25 – 30.

¹⁷⁰ *Ibid.*

¹⁷¹ B. BOTERO ARCILA, *AI Liability Along the Value Chain*, *op. cit.*, p. 31.

¹⁷² *Ibid.*

¹⁷³ M. BUITEN, A. DE STREEL and M. PEITZ, “The law and economics of AI liability”, *op. cit.*, pp. 11 – 13.

¹⁷⁴ Council Directive of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, *O.J.E.U.*, L 210/29, 7th of August 1985, art. 1.

no Member State may maintain or introduce more or less stringent provisions in respect of damage caused by defective products unless expressly authorised to do so by the Directive.¹⁷⁵ For claims that fall outside the scope of the PLD, such as claims for damage that cannot be compensated under the product liability regime or claims against actors other than producers, injured persons must rely on other horizontally applicable rules and national laws in order to recover their losses.¹⁷⁶

Stakeholders have expressed concerns about the adequacy of the 1985 PLD to address the current level of harm caused by defective products, particularly in light of the considerable role that digital technologies now play in disrupting production processes.¹⁷⁷ The EU authorities have also recognised the new challenges posed by digitalisation. In 2018, an evaluation to identify discrepancies between the 1985 PLD and the issues raised by digital technologies unfolded.¹⁷⁸ It concluded that, while the liability rules laid down in the 1985 PLD are broadly appropriate, key concepts such as "*product*", "*damage*", "*defectiveness*" and "*producer*" are no longer suited to the changing patterns of production driven by digitalisation and the circular economy.¹⁷⁹ Significant legal fragmentation has occurred across Member States, which is not only likely to create significant uncertainty about the potential liability of economic operators, but also to undermine effective consumer protection.¹⁸⁰ In this context, the European Commission presented a proposal aiming to modernise the maximum-harmonisation framework of the 1985 PLD.¹⁸¹

The European Commission's proposal for the rPLD underwent several amendments before its final adoption. The Council introduced its changes in June 2023, followed by the European Parliament in October 2023.¹⁸² By January 2024, the two institutions reached a provisional agreement on the text.¹⁸³ The version ultimately adopted in October 2024 closely mirrors that agreement, with only minor modifications – primarily linguistic clarifications and refined formulations – leaving the substance of the text largely unchanged.¹⁸⁴ Nevertheless, several key differences can be identified between the European Commission's original proposal and the final adopted version.¹⁸⁵ First, the adopted text explicitly includes non-material losses within the scope of compensable harm, provided they arise from a type of damage already recognized under the Directive.¹⁸⁶ Second, the final text excludes free and open-source software developed or supplied outside the context of commercial activity from its scope.¹⁸⁷ Third, the final version introduces a definition of "*substantial*

¹⁷⁵ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *Maastricht Journal of European and Comparative Law*, 2024, Vol. 24, p. 2; G. VELDT, "The new product liability proposal – fit for the digital age or in need of shaping up? An analysis of the draft product liability directive", *J.E.C.M.L.*, 2023, Vol. 12, p. 25.

¹⁷⁶ *Ibid.*

¹⁷⁷ *Ibid.*; T. CABRAL, "Liability and artificial intelligence in the EU: Assessing the adequacy of the current Product Liability Directive", *Maastricht Journal of European and Comparative Law*, 2020, Vol. 27, p. 615.

¹⁷⁸ EUROPEAN COMMISSION, "Evaluation of Council Directive 85/374/EEC on the approximation of laws, regulations and administrative provisions of the Member States concerning liability for defective products", SWD(2018) 157 final.

¹⁷⁹ *Ibid.*, p. 52.

¹⁸⁰ EUROPEAN COMMISSION, "Evaluation of Council Directive 85/374/EEC on the approximation of laws, regulations and administrative provisions of the Member States concerning liability for defective products", SWD(2018) 157 final, p. 26.

¹⁸¹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024.

¹⁸² COUNCIL OF THE EUROPEAN UNION, Interinstitutional File: 2022/0302(COD), 15 June 2023.

¹⁸³ COMMITTEE ON THE INTERNAL MARKET AND CONSUMER COMMITTEE ON LEGAL AFFAIRS, "Provisional agreement resulting from interinstitutional negotiations – proposal for a Directive of the European Parliament and of the Council on liability for defective products", 31 January 2024.

¹⁸⁴ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, 2025, p. 21; B. ROHRSEN and L. TIBI, "Product Liability Directive – Adoption by European Council", 2024, 23 October 2024, available on <https://www.taylorwessing.com/en/insights-and-events/insights/2024/10/product-liability-directive>, accessed 11th of May 2025.

¹⁸⁵ B. ROHRSEN and L. TIBI, "Product Liability Directive – Adoption by European Council", *op. cit.*; EUROPEAN PARLIAMENT, Legislative Train Schedule, available on <https://www.europarl.europa.eu/legislative-train/theme-a-europe-fit-for-the-digital-age/file-new-product-liability-directive>, accessed 11th of May 2025.

¹⁸⁶ Proposal for a Directive of the European Parliament and of the Council on liability for defective products, 28 September 2022, COM(2022) 495 final, art. 4.6; Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 6.2.

¹⁸⁷ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 2.2.

*modification*¹⁸⁸, which was absent from the initial draft. This addition provides greater clarity on when liability may shift from the original manufacturer to a party making significant changes to the product.¹⁸⁹ Fourth, the standard for assessing a product's defectiveness appears to differ in wording between the two texts. The Proposal defined a defective product as one that fails to provide the level of safety the "*public at large is entitled to expect*".¹⁹⁰ The adopted version, however, refers to the safety that "*a person*"¹⁹¹ is entitled to expect. Despite this change, Recital 30 of the final version clarifies that the defectiveness assessment should still be based on an objective evaluation of the safety expectations of the general public, suggesting that the underlying standard remains unchanged. Fifth, the adopted text includes a new provision concerning manufacturers' rights of recourse.¹⁹² Where a defective software component is integrated into a product, the final text denies the integrating manufacturer's right of recourse against the component's producer if that producer was a micro or small enterprise at the time the component entered the market – provided the manufacturer has contractually waived that right. However, such waivers may be rare in practice, as micro and small enterprises typically lack bargaining power in B2B negotiations.¹⁹³ Finally, the adopted version extends the period for compensation. While the Proposal had increased the standard 10-year period to 15 years in exceptional cases involving latent personal injuries, the final text further extends this period to 25 years.¹⁹⁴

4.4. Broadening the concept of "product"

Contemporary software is characterised by complexity, rendering it challenging to make generalisations regarding their nature and integration within products. Software can be integrated into or remotely connected to a product (e.g. the software supporting autonomous vehicles) and thus influence its performance, but it can also operate as a standalone application installed on a tangible product.¹⁹⁵ In considering the legal status of software, policymakers explored a range of approaches. One option under consideration was to instruct Member States to categorise software as a component of a more comprehensive product.¹⁹⁶ This approach would have empowered consumers to initiate legal action based on extra-contractual liability against software providers for damages resulting from defects in the software. However, this approach raised two significant concerns. Firstly, it would have implied that only the component software "*necessary*" for a tangible product to function would be covered by product liability. Conversely, if damage was inflicted by an "*add-on*" software that was not essential, it would neither have been regarded as a component of a product nor as a product in its own right. Therefore, the provider of the add-on software would not have been subject to the product-liability regime.¹⁹⁷ Secondly, defining software as a component of a product had the potential to alter the incentive for precaution allocated between the provider of the software and the manufacturer of the product. By categorising software as a product in its own right, the software provider is compelled to provide timely updates to ensure

¹⁸⁸ *Ibid.*, art. 4.18.

¹⁸⁹ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, pp. 21 – 22.

¹⁹⁰ Proposal for a Directive of the European Parliament and of the Council on liability for defective products, 28 September 2022, COM(2022) 495 final, art. 6.1.

¹⁹¹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 7.1.

¹⁹² *Ibid.*, art. 12.2.

¹⁹³ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 22.

¹⁹⁴ Proposal for a Directive of the European Parliament and of the Council on liability for defective products, 28 September 2022, COM(2022) 495 final, art. 14.3; Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 17.2.

¹⁹⁵ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 5.

¹⁹⁶ EUROPEAN COMMISSION, "Commission staff working document impact assessment report accompanying the document Proposal for a Directive of the European Parliament and of the Council on liability for defective products", SWD(2022) 316 final, p. 31.

¹⁹⁷ *Ibid.*, p. 32.

the product's effective functioning. Conversely, the manufacturer might be able to evade liability by asserting that the operation of the software and updates are beyond its control.¹⁹⁸

The other option, adopted by the revised PLD, is to define software as a product *per se*. The new Directive identifies this notion as a product explicitly, yet it does not contain a proper definition of the term "*software*"¹⁹⁹: It simply provides an enumeration of certain forms of software, including but not limited to operating systems, computer programs, applications, firmware and AI systems.²⁰⁰ However, the text set up an exemption for "*free and open-source software developed or supplied outside the course of a commercial activity*"²⁰¹ in an attempt to strike a balance between innovation and liability. Whilst this may be regarded as beneficial in terms of facilitating innovation²⁰², questions could be asked about the adequacy of the rPLD in addressing the potential adverse implications of such free and open-source software – as research already demonstrated that open-source AI software could cause harm, a consideration that is frequently overlooked by AI ethics codes.²⁰³

Finally, it is interesting to examine the treatment of emerging business models – such as Software as a Service (SaaS) – within rPLD. Despite Recital 12 of the Proposal stating that "*(...) software is a product for the purposes of applying no-fault liability, irrespective of the mode of its supply*"²⁰⁴, some scholars raised concerns regarding the ambiguous treatment of SaaS. Specifically, they noted that the Recital did not explicitly include SaaS when exemplifying the concept of software, thereby leaving uncertainty about its inclusion within the scope of the Directive.²⁰⁵ However, the final version of the rPLD resolves this ambiguity by stating unequivocally that: "*(...) software is a product for the purposes of applying no-fault liability, irrespective of the mode of its supply or usage, and therefore irrespective of whether the software is stored on a device, accessed through a communication network or cloud technologies, or supplied through a software-as-a-service model*".²⁰⁶

4.5. The interplay between the notion of component and related service

In the context of product safety, inaccurate information can potentially compromise the integrity of the product itself. While the rPLD reasserts that information fall outside the scope of the notion of product²⁰⁷, treating information as a component of a product in certain instances would align with the PLD's objective of enhancing consumer protection.²⁰⁸

The rPLD has fundamentally reconceptualised the notion of "*component*" and defines it as: "*any item, whether tangible or intangible, raw material or related service, that is integrated into, or inter-connected with, a product*".²⁰⁹ Some argue that the rPLD supports a broad interpretation of the notion of component that could encompass data and particularly data that contributes to the functioning of a product.²¹⁰ In the context of

¹⁹⁸ *Ibid.*

¹⁹⁹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 4(1).

²⁰⁰ *Ibid.*, Recital 13.

²⁰¹ *Ibid.*, art. 2.2.

²⁰² P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *Computer Law and Security Review*, 2023, Vol. 51, p. 11.

²⁰³ L. DABBISH *et al.*, "Limits and Possibilities for Ethical AI in Open Source: A Study of Deepfakes", 2022, available on <https://dl.acm.org/doi/pdf/10.1145/3531146.3533779>, accessed 28th of February 2025.

²⁰⁴ Proposal for a Directive of the European Parliament and of the Council on liability for defective products, 2022/0302 (COD), Recital 12.

²⁰⁵ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 6.

²⁰⁶ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, Recital 13.

²⁰⁷ *Ibid.*; D. WUYTS, "The Product Liability Directive – More than two Decades of Defective Products in Europe", *J.E.T.L.*, 2014, Vol. 5, p. 5.

²⁰⁸ P. MACHNIKOWSKI *et al.*, *An Analysis of the State of the Art in the Era of New Technologies*, Intersentia, 2021, p. 481.

²⁰⁹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, Recital 15, art. 4(4).

²¹⁰ J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *C.L.S.R.*, 2023, Vol. 51, p. 13.

autonomous vehicles, for instance, this interpretation could imply that a component manufacturer may be held liable for data or mapping failures that compromise the vehicle's safe operation and ultimately result in an accident.²¹¹ If so, claimants could potentially pursue liability not only against the product's manufacturer but also against the party responsible for the data component, should that data contribute to the harm suffered.²¹²

Moreover, the Directive defines the concept of "*related service*" as: "*A digital service that is integrated into or interconnected with a product, in such a way that its absence would prevent the product from performing one or more of its functions*".²¹³ The new definition of "*component*" gives rise to significant repercussions for the legal status of digital services and the delineation between products and services. Even if the product-service dichotomy is upheld because a digital service, alone, would not constitute a product according to the rPLD²¹⁴, those interconnected with a product and influencing its functionalities – like the continuous supply of traffic data in a navigation system or a health monitoring service that relies on a physical product's sensors to track the user's health metrics –²¹⁵ would be acknowledged as a component of a product. This would render its providers liable under product liability laws, contingent upon its integration with the product of the manufacturer – or under its control – and that its absence of the product.²¹⁶

In accordance with Article 4(3) of the rPLD, the notion of "*functionality*" serves as a key criterion in determining whether a specific digital service can be designated as a related service. In the event that a digital service is deemed to exert no influence on the functionality of the overall product, it would fall outside the scope of the rPLD. Some authors argue that this concept of functionality could be interpreted in two distinct ways.²¹⁷ The first is a literal interpretation, under which any influence on the performance of the product is considered functional.²¹⁸ The second is based on objective interpretation linked to the safety of a product.²¹⁹ If the latter is followed, digital services that have no impact on the safety of the connected product fall outside the scope of the directive.²²⁰ For example, in a case where the performance of a product hinges on specific digital services – such as the provision of data that is utilised to determine an individual's access to financial services²²¹ or to assess the recidivism risk of a criminal²²² – and it is discovered that the supplied data is discriminatory. In such a case, under the second interpretation, these digital services may not be regarded as related services. Consequently, the service providers supplying and analysing such data would not be regarded as component manufacturers, and would not be subject to product liability. While some recommend that the rPLD provides a clearer definition of the notion of "*functionality*"²²³, it could be argued that an interpretation encompassing any factor that influences the functions of the product should be preferred. Such an interpretation would not only enhance the Directive's capacity to "*ensure a high level of protection of consumers and other natural*

²¹¹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, O.J.E.U., 18th of November 2024, Recital 36, art. 8.1(b).

²¹² *Ibid.*

²¹³ *Ibid.*, art. 4(3).

²¹⁴ *Ibid.*, Recital 17.

²¹⁵ *Ibid.*

²¹⁶ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 7.

²¹⁷ *Ibid.*

²¹⁸ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 12.

²¹⁹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, O.J.E.U., 18th of November 2024, Recital 17.

²²⁰ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 7.

²²¹ *Ibid.*; F. ZUIDERVEEN BORGESIU, "Strengthening Legal Protection against Discrimination by Algorithms and Artificial Intelligence", *The International Journal of Human Rights*, 2020, Vol. 22, p. 25.

²²² *Ibid.*; P. HÄCKER, "Teaching Fairness to Artificial Intelligence: Existing and Novel Strategies Against Algorithms Discrimination Under EU Law", *C.M.L.R.*, 2018, Vol. 55, p. 1143.

²²³ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 7.

persons"²²⁴, but also, regarding AI, align with Article 10.3 of the AI Act, which mandates that high-risk AI systems be trained on datasets that are: *"relevant, sufficiently representative, and, to the greatest extent possible, free of errors and complete in view of the intended purpose"*.²²⁵ Ultimately, the assessment of a product's safety appears to align more closely with the evaluation of its defectiveness than with the legal classification of its elements as related services.²²⁶

Eventually, in addition to the requirement of functionality, it is also necessary to determine whether the digital service is integrated into or interconnected with the product of the manufacturer, or within the control of the manufacturer.²²⁷ Ultimately, the rPLD delineates the limits of a manufacturer's control by clarifying that: *"A manufacturer should not be considered to have consented to integration or interconnection merely by providing for the technical possibility of integration or interconnection, by recommending certain brands, or by failing to prohibit potentially related services or components."*²²⁸ Yet on the contrary: *"Once a product has been placed on the market, it should be considered to remain within the manufacturer's control where the manufacturer retains the ability to supply software updates or upgrades itself or via a third party"*.²²⁹

4.6. The adaptations surrounding the notion of "damage"

4.6.1 The removal of the threshold for property damage contained in the 1985 PLD

The 1985 PLD states that an individual cannot initiate a claim for the recovery of property loss if the value is inferior to €500.²³⁰ This threshold may enable manufacturers of products that are predisposed to engender only minor property damage to circumvent their liability. The 1985 PLD's failure to sanction such manufacturers' misconduct twists their incentive to exercise due care in adopting measures that improve product safety.²³¹ Moreover, consumer organisations have confirmed that this threshold hinders consumers' ability to obtain effective remedies for their losses.²³² Given the prevalence of deductibles in insurance contracts, it is highly probable that a consumer who experiences property loss valued at less than €500 will receive no compensation under the product-liability regime: an outcome that is inconsistent with the principle of effective compensation.²³³ In light of the aforementioned considerations, the rPLD eliminates the €500 threshold with a view to establishing appropriate incentives for economic operators to avoid defects, even if such defects result in minor property-related damages.²³⁴ Eventually, the limitation of eligible damage to privately used property should be relinquished because it reflects an anachronistic and formalistic comprehension of products liability law as a component of consumer protection law exclusively. Commercially used property must be incorporated concomitantly, particularly from an incentives perspective.²³⁵

²²⁴ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 1.

²²⁵ Häcker states that those providing training data for an AI system offer an essential related service. Hence, given the pivotal role of training data in machine learning, developers of such data now fall within the scope of the PLD, see P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 12.

²²⁶ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, Recital 30, art. 7.

²²⁷ *Ibid.*, Recitals 18, 19, art.4(5), 8.1.

²²⁸ *Ibid.*, Recital 18.

²²⁹ *Ibid.*, Recital 19.

²³⁰ Council Directive 85/374 of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, *O.J.E.U.*, 7th of August 1985, L 210/29, art. 9(b).

²³¹ EUROPEAN COMMISSION, "Commission staff working document impact assessment report accompanying the document Proposal for a Directive of the European Parliament and of the Council on liability for defective products", SWD(2022) 316 final, pp. 22 – 23.

²³² *Ibid.*

²³³ Charter of Fundamental Rights of the European Union, *O.J.E.U.*, 18th of December 2000, C 364/1, art. 47.

²³⁴ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 6.

²³⁵ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 12; G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", 2023, pp. 33 – 34.

4.6.2 The extension of eligible damages to the loss and corruption of data

At the time of the drafting of the 1985 PLD, the concept of property damage was understood as the destruction of a physical object or the diminution of its value. The advent of digital technologies has introduced a paradigm shift in the conceptualisation of property. The emergence of digital assets as highly prized commodities has given rise to questions regarding their treatment as a form of property and the means of safeguarding them.²³⁶ The concept of property and its scope are defined in domestic law. In civil-law countries, a *numerus clausus* principle is typically adopted, whereby the scope of property is defined exhaustively by law.²³⁷ This principle is invoked to prevent individuals from defining the scope as they see fit. Although damage to property is recognised in the PLD, its scope can vary from one Member State to another. The absence of a universally accepted definition of data as property in the digital age is primarily attributable to the intractable complexity of addressing fundamental questions, such as determining data ownership. This underscores the challenge in relying on property rules to adequately safeguard data, emphasising the critical role that liability rules play in this domain.²³⁸ By acknowledging data as a protected interest under the rPLD, individuals are empowered to seek redress for any loss of data through the judicial process. However, the challenge lies in identifying the appropriate liability regime to apply in such circumstances.²³⁹ The rPLD recognises material losses from the loss or corruption of data not used exclusively for professional purposes as damage.²⁴⁰ Nevertheless, Member States will maintain the power to determine whether and to what extent data can be recognised as property. Moreover, damage resulting from the loss of commercially used data will not be eligible for compensation under the new framework, which is indicative of the prioritisation of the product-liability regime as a consumer-protection legislation.²⁴¹

It is worth mentioning that both the rPLD and the GDPR address, albeit to different extents, the issue of damage relating to data. Yet it should be borne in mind that their applicable contexts could significantly differ. Firstly, while the GDPR only covers personal data, the rPLD follows the definition of data set out in the Digital Governance Act and therefore encompasses all types of data, whether personal or non-personal.²⁴² Secondly, the rPLD protects the proprietary value of data resulting from loss or destruction, whereas the GDPR deals with damages resulting from the loss of control over personal data (that does not automatically diminish the economic value of such data).²⁴³ Thirdly, the GDPR tackles violation of data protection rules while the rPLD only allows claimants to recover the material damage resulting from a loss of data caused by a defective product.²⁴⁴ In the event of a defective hard drive resulting in a loss of personal digital learning materials, the associated damage is capable of being linked to an objective market price, enabling the individual to quantify the losses sustained. In an additional case, should the defect in a hard drive lead to the loss of digital pictures of significant emotional significance, the question of whether the individual is able to claim compensation for

²³⁶ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 10.

²³⁷ T. MERRILL and H. SMITH, "Optimal Standardization in the Law of Property: The Numerus Clausus Principle", *The Yale Law Journal*, 2000, Vol. 110, p. 1.

²³⁸ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 12; G. CALABRESI and D. MELAMED, "Property Rules, Liability Rules, and Inalienability: A View of the Cathedral", *Harvard Law Review*, 1972, Vol. 85, p. 1089.

²³⁹ *Ibid.*

²⁴⁰ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 6(1)(c).

²⁴¹ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 12; G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, pp. 24 – 25.

²⁴² Regulation (EU) 2022/868 of the European Parliament and of the Council of 30 May 2022 on European data governance and amending Regulation (EU) 2018/1724 (Data Governance Act), *O.J.E.U.*, 3rd of June 2022, L 152/1, art. 2. The DGA defines data as: "Any digital representation of acts, facts or information and any compilation of such acts, facts or information, including in the form of sound, visual or audiovisual recording".

²⁴³ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 12.

²⁴⁴ *Ibid.*

non-material losses (for example emotional distress) can be determined by reference to the provisions stipulated within the relevant domestic legal framework.²⁴⁵ A final example is the loss of chance. In scenarios where a digital professional certificate is irretrievably lost due to a defective document management system, unabling the holder to complete a job application form on time, domestic rules will determine whether the holder can rely on the product-liability regime to obtain compensation.²⁴⁶

4.7. The evolution of the notion of "Defectiveness"

The fundamental requirement that triggers liability under the rPLD – which mirrors the current PLD – is the defectiveness of the product.²⁴⁷ From an economic and technical standpoint, defectiveness is the pivotal element as operators in the economic sphere, such as manufacturers and developers, are best placed to prevent defects.²⁴⁸ They are typically responsible for the management of development and production risks and are inclined to incur the least costs for mitigating them, and should therefore be incentivised to do so.²⁴⁹ If the liability framework is correctly configured, it may be theoretically possible to minimise the sum of precaution and accident costs. Nevertheless, the new provision on defectiveness only alludes to these economic and technical considerations, rather than directly mirroring them. Instead, it echoes Article 6 of the former PLD by recurring on the consumer expectation standard which may be ambiguous at best and, in the worst-case scenario, devoid of any content.²⁵⁰

It has been demonstrated in previous research that the application of the *"legitimate safety test"* to assess the defectiveness of a product can be particularly challenging in an AI context.²⁵¹ This is due to the fact that safety expectations are likely to be particularly high for AI systems used in high-risk contexts, such as healthcare and mobility.²⁵² Concurrently, the implementation of this evaluation may encounter significant challenges due to the complexity, novelty, and inherent opacity of AI systems.²⁵³ Additionally, the fact that such systems and products can be interconnected further complicates the identification of defects. The incorporation of self-learning capabilities within AI systems gives rise to concerns regarding the occurrence of unforeseen deviations in decision-making processes and the categorisation of such deviations as defects.²⁵⁴ The rPLD does not introduce substantial alterations to the legitimate safety test but encompasses new, AI-specific scenarios that must be considered during its implementation.²⁵⁵

To assess the defectiveness of a product, both the 1985 PLD and the rPLD rely on a consumer expectations test according to which: *"The defectiveness of a product should be determined by reference not to its fitness*

²⁴⁵ *Ibid.*

²⁴⁶ G. SPLINDLER, "Different Approaches for Liability of Artificial Intelligence – Pros and Cons – the New Proposal of the EU Commission on liability for Defective Products and AI systems", pp. 8 – 9.

²⁴⁷ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, O.J.E.U., 18th of November 2024, art. 7.

²⁴⁸ S. SCHAVELL, *Foundations of economic analysis of law*, Harvard University Press, 2004, pp. 215 – 221.

²⁴⁹ G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, p. 9.

²⁵⁰ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 14; G. WAGNER, "Robot Liability", in *Research Handbook in Data Science and Law* (under the dir. of V. MAK *et al.*), 2018, Elgar Publishing, Cheltenham, pp. 55-82.

²⁵¹ C. WENDEHORST, "Safety and Liability Related Aspects of Software", *Study commissioned by the European Commission*, 2020, pp. 67 – 69.

²⁵² Judgment of the Court of 5 March 2015, *Boston Scientific Medizintechnik*, C-503/13, EU:C:2015:148.

²⁵³ J-S BORGETTI, "How Can Artificial Intelligence Be Defective?", in *Liability for Artificial Intelligence and the Internet of Things* (under the dir. of S. LOHSSE, R. SCHULZE and D. STAUDENMAYER), Bloomsbury Publishing, 2019, pp. 66 – 72.

²⁵⁴ EXPERT GROUP ON LIABILITY AND NEW TECHNOLOGIES – NEW TECHNOLOGIES FORMATION, "Liability for Artificial Intelligence", *op. cit.*, p. 28.

²⁵⁵ J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 13; Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, O.J.E.U., 18th of November 2024, art. 7.

for use but to the lack of the safety that the public at large is entitled to expect".²⁵⁶ Consequently, safety is the sole criterion used to ascertain whether a product meets consumers' expectations. The question of whether a product is fit for its intended purposes is resolved by national rules on the sale of goods.²⁵⁷ Furthermore, the expectation of safety is based on an objective standard – the "*average consumer*"²⁵⁸ – rather than the preferences of specific consumers. In order to accurately identify the expectations of the public at large, the courts must take into consideration a variety of factors, including the product's intended purpose, its objective characteristics and its properties.²⁵⁹ If the product is intended to be available to specific groups of individuals, the specific requirements of those individuals should also be taken into account.²⁶⁰ For instance, certain products – such as life-sustaining medical devices – pose particularly high risks of harm to individuals and therefore generate correspondingly heightened safety expectations. Therefore, courts should be permitted to consider a product defective without the need to establish its actual defectiveness, provided it forms part of the same production series as a product that has already been proven to be defective.²⁶¹

In accordance with the consumer expectations test, a product should not be categorised as defective solely on the basis of: the existence of a more advanced product or its subsequent release into the market²⁶², and the supply of updates or upgrades.²⁶³ In this regard, the rPLD acknowledges the manufacturer's expertise, as reflected in the knowledge they possess at the time of product release. While multiple manufacturers may engage concurrently in the development of a given product, legislative provisions should recognise that they may have different expertise, working methodologies, and techniques, which may collectively achieve analogous objectives. Hence, provided that products meet industrial standards and are free of defects upon their release, they should not be categorised as defective merely due to the existence of superior versions or the subsequent design of such versions following the product release.²⁶⁴

The 1985 PLD enumerates three criteria that should be taken into consideration in order to ascertain whether a product is defective or not: its presentation, its reasonable expected use, and the time when it was put into circulation.²⁶⁵ To address the challenges posed by dynamic products, software and AI, new circumstances have been added in the rPLD, including²⁶⁶: "*The effect on the product of other products that can reasonably be expected to be used together with the product*"²⁶⁷; "*Product safety requirements, including safety-relevant cybersecurity requirements*"²⁶⁸; "*The effect on the product of any ability to continue to learn after deployment*"²⁶⁹;

²⁵⁶ Council Directive 85/374 of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, *O.J.E.U.*, 7th of August 1985, L 210/29, art. 6(1); Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, Recital 30, art. 7.

²⁵⁷ *Ibid.*

²⁵⁸ G. HOWELLS, C. TWIGG-FLESNER and T. WILHELMSSON, *Rethinking EU Consumer Law*, 2017, Taylor & Francis, pp. 6 – 7.

²⁵⁹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 7(2).

²⁶⁰ *Ibid.*, Recital 30.

²⁶¹ *Ibid.*, Recital 30; Judgment of the Court of 5 March 2015, *Boston Scientific Medizintechnik*, C-503/13, EU:C:2015:148.

²⁶² *Ibid.*, art. 7(2).

²⁶³ *Ibid.*, Recital 35.

²⁶⁴ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, Recital 25.

²⁶⁵ Council Directive 85/374 of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, *O.J.E.U.*, 7th of August 1985, L 210/29, art. 6(1).

²⁶⁶ J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 13.

²⁶⁷ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 7(2)(d).

²⁶⁸ *Ibid.*, art. 7(2)(f).

²⁶⁹ *Ibid.*, art. 7(2)(c).

"Any intervention by a regulatory authority or by an economic operator"²⁷⁰ or "The specific expectations of the end-users for whom the product is intended".²⁷¹

The expansion of the list of circumstances that must be considered is of particular salient importance in the context of AI, as it has the potential to enhance legal certainty and clarity. This development may facilitate the process of substantiating the defectiveness of an AI product, as it encompasses circumstances that are tailored to the evolving nature of software and AI.²⁷² However, the circumstances relating to the "*effect on the product of any ability to continue to learn after deployment*"²⁷³ raises interpretation questions. One may wonder whether this means that such a feature may render the product more likely to be assessed as defective. Although this would be beneficial for the injured person, it would place the manufacturer at greater risk of liability. However, the opposite may also be true. It could be contended that the public should anticipate self-learning software to engender unanticipated outcomes, which may lead to harm.²⁷⁴ In such a scenario, Article 7.2(c) would be interpreted as a reduction in the public's expectations of safety with regard to self-learning software. Furthermore, when enumerating the factors that facilitate the evaluation of a product's defectiveness, Article 7.2(h) alludes to the specific expectations of end users for whom the product is designed. While it remains to be ascertained how this will ultimately interact with the general public's legitimate expectation test, the flexibility of the legitimate safety test often operated to the advantage of claimants²⁷⁵, as courts already imposed liability on defendants even when it had not been conclusively proven that the product was defective.²⁷⁶ The legitimate safety expectations test is thus rather considered victim-friendly, as it allows courts to require a high standard of safety, thereby increasing the chances that injured parties will obtain compensation for their losses.²⁷⁷

Despite the expanded list of factors courts must consider, the legitimate safety expectations test remains inherently vague.²⁷⁸ When evaluating the defectiveness of an AI system, some consider that it may be useful to supplement this test with a risk-utility analysis, as applied in US product liability law.²⁷⁹ Under this approach, an AI system could be deemed defective if the benefits of enhancing its safety clearly outweigh the associated costs.²⁸⁰ This test, commonly employed in tort law to assess negligence, centers on whether the manufacturer should have invested more to prevent the harm in question.²⁸¹ One key advantage of the risk-utility test over the consumer expectations test lies in its analytical precision, as it provides judges with a structured framework to evaluate defectiveness by weighing the costs and benefits of improved safety measures.²⁸² On the contrary, others argue that the risk-utility test is incompatible with EU product liability law, which is premised on strict

²⁷⁰ *Ibid.*, art. 7(2)(g).

²⁷¹ *Ibid.*, art. 7(2)(h).

²⁷² J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 13.

²⁷³ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 7.2(c).

²⁷⁴ J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 13.

²⁷⁵ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 23; T. VERHEYEN, *Eenzijdige beheersing van het aansprakelijkheidsrisico*, Intersentia, 2021, pp. 562 – 568; Judgment of the Court of 20 November 2014, *Novo Nordisk Pharma GmbH v. S*, C310/13, EU:C:2014:2385.

²⁷⁶ T. VERHEYEN, *ibid*; Judgment of the Court of 5 March 2015, *Boston Scientific Medizintechnik GmbH v AOK Sachsen-Anhalt – Die Gesundheitskasse and Betriebskrankenkasse RWE*, Joined Cases C-503/13 and C-504/13, EU:C:2015:148.

²⁷⁷ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 23; T. VERHEYEN, *ibid*.

²⁷⁸ T. VERHEYEN, *Eenzijdige beheersing van het aansprakelijkheidsrisico*, *op. cit.*, pp. 574 – 575.

²⁷⁹ D. OWEN, "Risk-Utility Balancing in Design Defect Cases", *U.M.J.L.R.*, 1997, Vol. 30, p. 239.

²⁸⁰ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 14.

²⁸¹ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 25; T. VERHEYEN, *Eenzijdige beheersing van het aansprakelijkheidsrisico*, *op. cit.*, p. 572.

²⁸² *Ibid*; M. BUITEN, "Product liability for defective AI", *European Journal of Law and Economics*, *op. cit.*, p. 261.

liability²⁸³, as manufacturers may be held liable for placing a defective product on the market, irrespective of fault.²⁸⁴ However, particularly in cases involving design or warning defects, EU product liability in practice resembles a fault-based system, where claimants must often demonstrate that the manufacturer acted negligently.²⁸⁵ For instance, in the context of design defects, plaintiffs must show that the harm could have been avoided had the manufacturer opted for a safer, alternative design.²⁸⁶ This alternative design test is particularly salient in the context of AI, where design defects are frequently cited as a primary source of harm, as flaws in autonomous AI systems often stem from suboptimal design decisions, such as biased training data or flawed algorithms.²⁸⁷ Nevertheless, claimants may face an increased evidentiary burden, as they would have to prove that the developer was negligent in designing the AI system that caused the damage.²⁸⁸

4.7.1 AI systems' potential to keep learning after deployment

One of the obstacles related to the identification of defects in AI systems is the potential ability to learn after their release on the market. Defects arising after this designated time frame are typically excluded from liability (see the "*later-defect defence*", below). The rPLD now takes into account any potential ability to learn after deployment.²⁸⁹, which represents a significant advancement.²⁹⁰ To illustrate this point, consider a scenario in which a machine learning steering component of an autonomous vehicle assimilates aggressive driving styles from other human drivers, post-deployment. In such a case, it becomes imperative for the economic operators to ensure that the adaptive driving feature does not result in aggressive driving beyond a certain risk tolerance threshold, at which point the defect would materialise.²⁹¹ Similarly, if a chatbot or a language translation tool learns from suggestions by users, the economic operators must implement mechanisms for curation or manual supervision to ensure that the system does not deteriorate due to erroneous suggestions or discriminatory interactions with users, as evidenced by the Microsoft Tay bot incident.²⁹² However, all AI systems do not engage in continual learning following deployment since the learning process is frequently halted after the model has been trained by the developers.²⁹³ Consequently, the rPLD accurately identifies the economic operators as the least-cost avoiders for emergent damage.²⁹⁴

4.7.2 Defects in AI systems

The rPLD does not address a crucial element concerning the defectiveness of AI systems. While AI systems are capable of avoiding mistakes humans might make, they are also prone to errors that would not have been committed by humans, as exemplified by the Tesla crash.²⁹⁵ In this incident, the autopilot system misinterpreted

²⁸³ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 25; T. VERHEYEN, *Eenzijdige beheersing van het aansprakelijkheidsrisico*, *op. cit.*, pp. 633 – 634.

²⁸⁴ P. HÄCKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *European Parliamentary Research Service*, 2024, pp. 27 – 28.

²⁸⁵ *Ibid.*

²⁸⁶ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 25; M. BUITEN, "Product liability for defective AI", *European Journal of Law and Economics*, *op. cit.*, p. 257; P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 14.

²⁸⁷ M. BUITEN, *ibid.*, p. 258.

²⁸⁸ *Ibid.*

²⁸⁹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, O.J.E.U., 18th of November 2024, art. 7.2(c).

²⁹⁰ G. CALABRESI, *The Cost of Accidents: A Legal and Economic Analysis*, Yale University Press, 1970, p. 340.

²⁹¹ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 14.

²⁹² *Ibid.*; E. HUNT, "Tay, Microsoft's AI Chatbot gets a crash course in racism from Twitter", *The Guardian*, 24th of March 2016, available on <https://www.theguardian.com/technology/2016/mar/24/tay-microsofts-ai-chatbot-gets-a-crash-course-in-racism-from-twitter>, accessed 11th of March 2025.

²⁹³ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 14.

²⁹⁴ P. HÄCKER, *op. cit.*; E. BISONG, *Building Machine learning and Deep Learning Models on Google Cloud Platforms*, Springer, 2019, p. 199.

²⁹⁵ *Ibid.*; D. YADRON and D. TYNAN, "Tesla driver dies in first fatal crash while using autopilot mode", available on <https://www.theguardian.com/technology/2016/jun/30/tesla-autopilot-death-self-driving-car-elon-musk>, accessed 12th of March 2025.

a large truck crossing as a distant bridge, leading to the vehicle's collision with the truck and resulting in the death of the Tesla passenger. It is evident that a human driver, under typical conditions, would not have misidentified the truck as a bridge. This raises the question of whether this bug can be classified as a defect under product liability law. Under EU product liability law, three different kinds of defect may be identified²⁹⁶: manufacturing, design and instruction (warning) defects.²⁹⁷ In a manufacturing defect case, the concrete product in question deviates from the design blueprint in a negative way.²⁹⁸ An instruction or warning defect is characterised by the presence of errors in the instructions for installation, use, or maintenance, or by the omission of essential information.²⁹⁹ Nevertheless, both kinds of defect do not present any major challenges in the context of artificial intelligence-based products.³⁰⁰

While it is conceivable that a particular instance of an AI model within a specific device may exhibit a unique manufacturing defect – due to an interrupted download resulting in an incomplete installation – or a unique instruction defect – because the instructions for use contain an inaccuracy – it is more probable that cases will relate to errors that are prevalent in all analogous models implemented on comparable devices, as design defects are considered as one of the most prevalent forms of defects in AI systems.³⁰¹ For instance, if an image recognition model fails to recognise certain structures, a scoring system does not function properly for specific levels of income, this is an error that applies to all versions of the model in the same way. The core issue, therefore, lies in the identification and analysis of such design errors within the context of AI.³⁰² In the field of legal literature, two perspectives of design defects in AI systems have been identified: an anthropomorphic and a system-oriented approach.³⁰³

4.7.2.1 The anthropomorphic approach³⁰⁴

In the former, the requirement is for a judge to identify a defect if an average human being would not have committed and if consumers would have expected a human not to make the given error.³⁰⁵ This approach has the advantage of incentivising operators to proactively identify and rectify "*truck-as-a-bridge*" missteps and similar edge cases. It is conceivable that an AI system such as the autopilot could circumvent all potential errors, including those committed by humans, yet still encounter confusion regarding trucks and bridges under certain rare and unpredictable conditions (e.g. due to the sunset). While costly, the elimination of this error is not an insurmountable task. Overall, the accident reduction capability of AI systems, despite the potential for errors, is evident as they are able to reduce accidents by up to 90% in comparison with human drivers.³⁰⁶ However, in those scenarios, the "*anthropomorphic standard*" would identify a defect like in the Tesla case, which could potentially lead to over-deterrence. Additionally, the determination of whether an error committed by the AI system would have been made by a human operator is not only challenging to achieve in practice, but also

²⁹⁶ *Ibid.*

²⁹⁷ A. BERTOLINI, "Artificial intelligence and civil liability", *Study requested by the JURY committee*, 2020, p. 52.

²⁹⁸ *Ibid.*

²⁹⁹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 7(1)(a).

³⁰⁰ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 15

³⁰¹ P. HÄCKER, *Ibid.*; M.C. BUITEN, "Product Liability for Defective AI", *European Journal of Law and Economics*, 2024, p. 258.

³⁰² P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 15.

³⁰³ *Ibid.*

³⁰⁴ *Ibid.*

³⁰⁵ G. BORGES, "Haftung für selbstfahrende Autos", 2016, *Computer und Recht*, pp. 272, 275, 276; C. GOMILLE, "Hersteller-haftung für automatisierte Fahrzeuge", *Juristen Zeitung*, 2016, Vol. 71, pp. 76 – 77.

³⁰⁶ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 15.

arbitrary. From a technical standpoint, and from the perspective of the injured individual, the distinction between an error attributable to a human replacement or the AI system is of negligible relevance.³⁰⁷

4.7.2.2 The AI-specific approach³⁰⁸

On the contrary, the system-oriented (or AI-specific) approach would move beyond the specifics of individual cases and instead evaluate the risk level of the entire AI system when it is deployed across all applicable devices. Consequently, a defect would only be identified in the event of a systemic malfunction.³⁰⁹ From a technical standpoint, a model is typically trained centrally and then deployed in various devices or scenarios. The model may be adjusted during or following deployment, a scenario addressed by Article 8.2 rPLD.³¹⁰ However, the design is typically determined at the modelling stage, not at the stage of the individually deployed model. This underscores the importance of directing incentives towards that stage. From an AI-specific perspective, technical standards must be considered, along with situations where these are not yet in place.³¹¹

Defectiveness should generally be defined by comparison with technical standards governing specific industry branches.³¹² The main advantage of this approach would be the alignment of the PLD liability regime with the AI Act, thereby ensuring a certain degree of cohesion and legal certainty as the AI Act explicitly encourages the establishment of technical standards.³¹³ In the event that such standards are in place, it is essential that they comprehensively delineate defectiveness within their respective scopes and, alternatively, delineate safe harbours for developers. This approach would foster innovation while concurrently providing potential claimants with clear guidelines concerning the identification of defects, assuming they have access to the requisite data. However, alternative reference points are also necessary as these standards are not always available yet.³¹⁴ In the context of autonomous driving, the error rate of the entire AI system could be compared to that of the average human driver, based on accidents per kilometre, for example. It could be contended that an error rate of the system under scrutiny that is lower than the average human error rate should be considered as excluding a defect, given that the reduction of accidents is a key aim of traffic regulation. Nonetheless, equating defectiveness with "*infrahuman*" performance has the effect of eliminating all incentives from product liability law to improve the system beyond the breakeven point with human performance.³¹⁵

On the other hand, it is conceivable that even AI models that perform below average in comparison to human performance could be considered socially advantageous and not defective. These models may facilitate solutions, such as medical treatment, in scenarios where they would not be accessible otherwise. Thus, even imperfect solutions could be deemed preferable to the status quo. Therefore, an AI-specific approach should not be confined to a comparison with human performance. It is imperative to adopt a systemic perspective –

³⁰⁷ *Ibid.*

³⁰⁸ *Ibid.*

³⁰⁹ In this case, the entity substantially modifying the model would be considered as a manufacturer of the new product.

³¹⁰ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 16.

³¹¹ *Ibid.*; M. GESTFELD, "A roadmap for autonomous vehicles: State tort liability, automobile insurance, and federal safety regulation", *C.L.R.*, 2017, Vol. 105; G. SPINDLER, "User Liability and Strict Liability in the Internet of Things and for Robots", in *Liability for Artificial Intelligence and the Internet of Things* (under the dir. of S. LOHSSE *et al.*), 2019, Nomos, p. 138.

³¹² Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024, art. 40 – 41.

³¹³ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 16.

³¹⁴ *Ibid.*; M. GESTFELD, "A roadmap for autonomous vehicles: State tort liability, automobile insurance, and federal safety regulation", *op. cit.*; G. SPINDLER, "User Liability and Strict Liability in the Internet of Things and for Robots", *op. cit.*, p. 138.

³¹⁵ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024, art. 40 – 41.

³¹⁶ C. KROET, "EU Standard Bodies flag delay to work on the AI Act", *Euronews*, 16th of April 2025, available on <https://www.euronews.com/next/2025/04/16/eu-standards-bodies-flag-delays-to-work-on-ai-act>, accessed 13th of May 2025; G. SPINDLER, "User Liability and Strict Liability in the Internet of Things and for Robots", *op. cit.*, p. 137.

³¹⁷ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 16.

given the continuous development and deployment of AI models – where any standard of defectiveness for AI products must be guided by two overarching objectives: Firstly, it must enable the deployment of AI models with infrahuman performance, provided they demonstrably enhance the status quo, and, secondly, it must incentivise continual improvement of the system, even in the domain of suprahuman performance.³¹⁶

4.7.2.3 Infrahuman performance

If an AI system does not, on average, demonstrate a level of performance equivalent to that of humans in a given task, this should serve as a trigger for a rebuttable presumption of defectiveness. In order to refute this presumption, economic operators would be required to undertake two comparisons: the first with the status quo in the absence of the AI model, and the second with reasonable alternative AI model designs, taking the list and Article 7 rPLD into account.³¹⁷

Firstly, in order to avoid a defect, a model must demonstrate that it improves upon the status quo without the model in question in terms of safety. For models with infrahuman performance, this implies that they cannot, by definition, substitute for human decision-makers. They may enhance the risk profile for affected individuals if they are incorporated into a smart decision-making framework under which the model makes a recommendation that is reviewed by humans. Operators must demonstrate, for instance through Randomized Controlled Trials, that this configuration enhances safety for affected individuals in comparison to a wholly human decision-making process. Another element in which an enhancement can be substantiated is the augmented scope of decisions.³¹⁸ For instance, cancer detection models have the potential to extend medical diagnostics to individuals who would not receive treatment otherwise.³¹⁹ In this scenario, operators must demonstrate that patients benefit, on average, from AI-assisted diagnostics. The expansion of medical care to previously underserved areas is a compelling argument in favour of this conclusion, even if some are still opposed to it.³²⁰

Secondly, in accordance with the prevailing principles of product liability, the existence of a defect is established if a reasonable alternative design exists, yet not adopted by the relevant operators. In essence, this entails the necessity of demonstrating, through a rigorous risk-utility assessment, that eliminating the error would be economically inefficient; which means the cost of implementing an alternative design with equivalent performance that avoids the error would exceed the expected cost of compensating for the resulting damages.³²¹ The scope of this test has expanded beyond the confines of the United States.³²² A seminal ruling by the German Federal Private Law Court in the Airbag case underscores the significance of this risk-utility analysis within the EU's framework for assessing design defects.³²³ This implies, for instance, that healthcare providers cannot uncritically deploy substandard AI systems as a substitute for investment in human personnel when the hiring of additional staff – realistically available – would yield greater improvements in patient outcomes than the proposed AI solution. In other words, systemic underfunding of the healthcare sector cannot shield the use of mediocre AI systems from liability.³²⁴

³¹⁶ *Ibid.*

³¹⁷ *Ibid.*

³¹⁸ *Ibid.*

³¹⁹ E. KRISJAN, P. RAJPURKAR and E.J. TOPOL, "Self-supervised learning in medicine and healthcare", 2022, *Nature Biomedical Engineering*, pp. 1 – 7.

³²⁰ A. FROOMKIN, I. R. KERR, and J. PINEAU, "When AIs outperform doctors: confronting the challenges of a tort-induced over-reliance on machine learning", *University of Miami Legal Studies*, 2019, Vol. 61; S. GRUNDMANN *et al.*, "Explainable AI under contract and tort law: legal incentives and technical challenges", 2020, *Artificial Intelligence and Law*, Vol. 28.

³²¹ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 16.

³²² Z. ADAM and S. DEAKING, *Tort Law*, Oxford University Press, 2019, p. 91.

³²³ BGH, Judgment of 16 June 2009, *Airbag*, VI ZR 107/08, BGHZ.

³²⁴ BGH, Judgment of 16 June 2009, *Airbag*, VI ZR 107/08, BGHZ, § 17.

Thirdly, if errors cannot be efficiently avoided, operators must effectively warn consumers of them.³²⁵

4.7.2.4 Suprahuman performance

Suprahuman performance should not be viewed as a *carte blanche* for economic operators to claim non-defectiveness. Instead, incentives for innovation and enhancement must be established within this domain. However, this does not imply that only the industry leader is considered free of defects and that any competitors with substandard performance are deemed defective. Such an interpretation would engender a pernicious winner-takes-all logic, which has demonstrated its deleterious effects on competition in markets governed by network effects.³²⁶ Furthermore, as previously explained, Article 7.3 rPLD also precludes such an interpretation by establishing that the introduction of a superior product in the market cannot be the exclusive grounds for determining a defect. Therefore, in order to incentivise continued innovation and performance in the suprahuman sector, economic operators should be enabled to circumvent the identification of design defects under three conditions³²⁷: Firstly, a risk-utility analysis must demonstrate the absence of a reasonable alternative design. Secondly, the entire product must demonstrate positive social utility.³²⁸ This criterion is generally not met, for example, by malicious AI developed for the purpose of deceiving and manipulating users.³²⁹ Thirdly, operators must warn of errors which cannot be addressed by a reasonable alternative design.³³⁰ These aforementioned criteria could balance the burden on economic operators, providing incentives to enhance suprahuman performance and to effectively protect affected individuals through the implementation of alternative designs or, as a less effective measure, through warnings.³³¹

In essence, it is recommended that the defectiveness of products be linked to technical standards, as it is encouraged by the AI Act, which endows these standards with binding effect. In instances where such standards do not exist, however, alternative solutions must be found.³³² It is proposed that infrahuman AI performance should trigger a presumption of defectiveness, which may be rebutted by demonstrating an improvement upon the status quo without the model. In the domain of suprahuman AI performance, manufacturers must continue to implement reasonable alternative designs to avoid design defects, and establish incentives to further enhance AI systems.³³³

4.7.3 Defences provided by the rPLD

If claimants successfully prove the damage, the defect, and the causal link between them, economic operators will be held liable. However, EU product liability law does not leave economic operators without defenses.³³⁴ As with the prevailing PLD, the rPLD establishes a list of already existing defences that enable economic operators to exonerate themselves from liability³³⁵: The "*regulatory compliance*"³³⁶ (stating that compliance with

³²⁵ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 17; H. LATIN, "Good warnings, bad products, and cognitive limitations", *U.C.L.R.*, 1993, Vol. 41, p. 1193.

³²⁶ G. WAGNER, "Robot Liability", *op. cit.*, pp. 27 – 45.

³²⁷ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 17.

³²⁸ D. OWEN, "Risk-Utility Balancing in Design Defect Cases", *op. cit.*, p. 243.

³²⁹ M. BRUNDAGE *et al.*, "The malicious use of artificial intelligence: Forecasting, prevention, and mitigation", *arXIV*, 2018.

³³⁰ H. LATIN, "Good warnings, bad products, and cognitive limitations", *op. cit.*

³³¹ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 17.

³³² *Ibid.*

³³³ *Ibid.*

³³⁴ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 30.

³³⁵ *Ibid.*

³³⁶ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 30.

mandatory regulations issued by public authorities can exempt manufacturers from liability³³⁷), the "*state-of-the-art*"³³⁸ and the "*later-defect*"³³⁹ defences.

4.7.3.1 The later-defect defence

A fundamental principle of product liability law is that manufacturers are only held accountable for defects deriving from their sphere of influence.³⁴⁰ This principle is exemplified by the so-called later-defect defence enshrined in Article 7(b) of the 1985 PLD, which grants manufacturers immunity from liability if: *"It is probable that the defect which caused the damage did not exist at the time when the product was put into circulation by him or that this defect came into being afterwards"*.³⁴¹ This defence has been the subject of extensive debates, with some scholars arguing that it is incompatible with the fact that AI systems keep evolving after their deployment.³⁴² However, from a technical standpoint, it must be reiterated that machine learning models do not generally perpetuate the learning process post-deployment, except when they are explicitly programmed to do so, such as in the case of online learning models.³⁴³ Consequently, even within the current framework, a defect that manifests initially only after the system has been deployed can be traced back to the initial decision of the manufacturer, prior to deployment, to enable continued adaptation. Therefore, the later-defect defence should not apply to those scenarios, even within the current framework. The rPLD explicitly makes this finding: it reiterates the later-defect defence in Article 11(1)(c) but also provides for exemptions from this defence in Article 11(2). Economic operators continue to be liable if the product is within the manufacturer's control³⁴⁴ and the defect concerns: *"a related service, the software including updates or upgrades, the lack of such updates or upgrades necessary to maintain safety, or a substantial modification"*³⁴⁵ of the product".³⁴⁶ From economic and technical perspectives, the retention of residual control over the product and its associated risks is compelling. Moreover, as previously mentioned, this is corroborated by Article 7.2(c) rPLD, which adds a continued learning ability to the list of factors to take into account when assessing the defectiveness of a product, and by Recital 50 rPLD which states that: *"(...) manufacturers should remain liable for defectiveness that comes into being after the moment of making a product available on the market as a result of software or related services within their control, be it in the form of updates or upgrades or machine-learning algorithms. Such software or related services should be considered to be within the manufacturer's control where they are supplied by that manufacturer or where that manufacturer authorises them or otherwise consents to their supply by a third party"*.³⁴⁷ It thus appears that if an AI system continues to learn from user data after being placed on the market, the manufacturer will remain liable for any damage resulting from its self-learning capabilities.³⁴⁸

Under the later-defect defence, only critical updates – like safety maintenance – are required to exonerate an

³³⁷ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, O.J.E.U., 18th of November 2024, art. 11(1)(d).

³³⁸ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 30.

³³⁹ *Ibid.*

³⁴⁰ T. CABRAL, "Liability and artificial intelligence in the EU: Assessing the adequacy of the current Product Liability Directive", *op. cit.*, pp. 615 – 635; J. LUZAK, "A Broken Notion: Impact of Modern Technologies on Product Liability", *E.J.R.G.*, 2020, Vol. 11, pp. 630 – 647.

³⁴¹ Council Directive of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, O.J.E.U., L 210/29, 7th of August 1985, art. 7(b).

³⁴² T. CABRAL, "Liability and artificial intelligence in the EU: Assessing the adequacy of the current Product Liability Directive", *op. cit.*, p. 629.

³⁴³ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 28.

³⁴⁴ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, O.J.E.U., 18th of November 2024, art. 4.5.

³⁴⁵ *Ibid.*, art. 4.18.

³⁴⁶ *Ibid.*, art. 11.2.

³⁴⁷ *Ibid.*, Recital 50.

³⁴⁸ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *CiTIP Working Paper*, 2025, p. 32.

economic operator from liability. Notably, the rPLD seemed to establish a non-contractual duty (a "*de facto*" obligation³⁴⁹) to provide safety updates³⁵⁰ but, surprisingly, Recital 51 of the rPLD affirms that it does not impose any obligation on manufacturers to update or upgrade a product.³⁵¹ However, even if the Directive does not expressly mandate such actions, manufacturers seeking to mitigate potential liability risks will, in practice, be compelled to provide safety-related software updates and upgrades.³⁵²

In addition, the rPLD also aligns the period during which the defect was non-discoverable with the extended control obligation of manufacturers, which is now enshrined in Article 7.1(e). If the manufacturer retains control of a product after it has been placed on the market or put into service and the defect becomes apparent during this time, the manufacturer is still liable.³⁵³ On the contrary, in cases where the product is not under the control of the manufacturer, the claimants would have to rely on Article 8.2 rPLD, which allows them to hold third parties liable if they substantially modified the product and made the product available on the market or put into service. It may be the case that the manufacturer's control may be limited and non-exclusive, particularly in instances where the operation of the product necessitates data provided by third parties or collected from the environment and is contingent on self-learning processes and personalising settings selected by the users.³⁵⁴

4.7.3.2 The state-of-the-art defence

Another significant, yet highly debated³⁵⁵, defence is embedded in Article 7(e) of the 1985 PLD. The manufacturer is exonerated from liability if: "*The state of scientific and technical knowledge at the time when he put the product into circulation was not such as to enable the existence of the defect to be discovered*".³⁵⁶ The CJEU clarified the debate in 1997 by stating that the state of knowledge refers to an objective assessment, independent of the subjective knowledge or capacities of the individual.³⁵⁷ The state-of-the-art defence is upheld by Article 11.1 rPLD but it is not absolute. Indeed, Article 18 of the rPLD moderates the scope of this defence by permitting Member States to introduce or amend national provisions that hold economic operators liable even where the defect could not have been discovered given the available scientific and technical knowledge at the relevant time. To exercise this option, Member States will have to notify the Commission of such measures no later than 9 December 2026 and ensure that the retained measures are: "*limited to specific categories of products, justified by public interest objectives, and proportionate*".³⁵⁸

The objective of this defence is to shield manufacturers of advanced technology products from liability to encouraging innovation.³⁵⁹ Conversely, it exempts manufacturers from assuming risks stemming from their production sphere, instead transferring losses to users.³⁶⁰ Yet scholars have highlighted the difficulties

³⁴⁹ DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 14.

³⁵⁰ *Ibid*; P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 28; G. SPINDLER, "Different Approaches for Liability of Artificial Intelligence – Pros and Cons – the New Proposal of the EU Commission on Liability for Defective Products and AI Systems", 2023, p. 15.

³⁵¹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, O.J.E.U., 18th of November 2024, Recital 51.

³⁵² J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *CiTiP Working Paper*, 2025, p. 32.

³⁵³ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 29.

³⁵⁴ EXPERT GROUP ON LIABILITY AND NEW TECHNOLOGIES – NEW TECHNOLOGIES FORMATION, "Liability for Artificial Intelligence", *op. cit.*, p. 28.

³⁵⁵ C. DE MEEÛS, "The Product Liability Directive at the Age of the Digital Industrial Revolution: Fit for Innovation?", *Journal of European Consumer and Market Law*, 2019, Vol. 8, p. 152; D. WUYTS, "More than two Decades of Defective Products in Europe", *op. cit.*, p. 30.

³⁵⁶ Council Directive of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, O.J.E.U., L 210/29, 7th of August 1985, art. 7(e).

³⁵⁷ Judgment of the Court of 29 May 1997, *Commission v. United Kingdom*, C-300/95, EU:C:1997:255, § 29.

³⁵⁸ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, O.J.E.U., 18th of November 2024, art. 18.3.

³⁵⁹ D. WUYTS, "The Product Liability Directive – More than two Decades of Defective Products in Europe", *op. cit.*, p. 30.

³⁶⁰ *Ibid*.

associated with the state-of-the-art defence in cases concerning AI systems. Given that injured parties typically possess limited understanding of the technical functioning of AI, they might find it challenging to effectively contest the validity of such a defence, even where it lacks substantive merit.³⁶¹ Consequently, claimants may often have to engage specialised expertise, which can incur significant costs. As the financial burden of litigation increases, individuals harmed by defective AI systems may become less prone to pursue legal action against the responsible economic operator.³⁶² To address this concern, a compromise could be pursued with regard to design defects that balances the interests of promoting innovation with the rights of injured parties to compensation.³⁶³ In the context of tort law theory, the concept of compensation by the state or a dedicated fund is recognised as a third option beyond the dichotomy between the compensation of injured parties and producers' liability.³⁶⁴ This solution could be a convincing compromise for development defects.³⁶⁵ A fund dedicated to the victims of technological risks could compensate injured parties if they can prove that they would have been able to argue a case against economic operators without the state-of-the-art defence. This would ensure that effective compensation is provided for any harms that do not originate from the sphere of end users.³⁶⁶ Moreover, contributory negligence – a defence that can be used by the manufacturer: *"If the victim's care level was less than due care for him, the victim is said to be contributorily negligent and must bear his losses"*³⁶⁷ – would need to be taken into account in order to ensure that end users are motivated to act with due diligence and do not start an excessive amount of unjustified litigations.³⁶⁸

4.7.4 *Liable parties*

Following the delineation of pivotal concepts, including *"product"*, *"damage"* and *"defectiveness"*, this section deals with the identification of the parties subject to product liability. The definition of liable parties serves two functions: it sets behavioural incentives for the ones concerned and it ensures that victims can effectively claim for damages.³⁶⁹ The 1985 PLD stipulated that all Member States had to ensure that the producer would be held liable for any damage caused by a defective product.³⁷⁰ The term *"producer"*, as elucidated in the 1985 PLD, encompasses manufacturers of finished products or component parts, producers of raw materials, importers, and any individual who present themselves as a producer.³⁷¹ Furthermore, suppliers are recognised as producers if the victim is unable to identify any of the aforementioned parties.³⁷² In accordance with the AI Act, a new terminology, *"economic operator"*, appears in the rPLD, replacing the notion of *"producer"*.³⁷³ Additional actors, such as software and service providers, authorised representatives and fulfilment service providers, are explicitly designated as economic operators under the revised PLD. Moreover, online intermediary platforms

³⁶¹ Or a *conditio sine qua non*, see J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 15.

³⁶² J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 31.

³⁶³ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 29.

³⁶⁴ *Ibid.*; G. DARI-MATTIACCI, "Tort law and economics", *Utrecht University Working Paper*, 2003, p. 31.

³⁶⁵ *Ibid.*; A. BERTOLINI, "Artificial intelligence and civil liability", *Study requested by the JURY committee*, 2020, p. 87.

³⁶⁶ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 29.

³⁶⁷ S. SCHAVELL, *Foundations of economic analysis of law*, *op. cit.*, pp. 184 – 188.

³⁶⁸ *Ibid.*, p. 184.

³⁶⁹ M. BUITEN, A. DE STREEL and M. PEITZ, "EU Liability Rules for the Age of Artificial Intelligence", *op. cit.*, p. 1.

³⁷⁰ Council Directive 85/374 of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, *O.J.E.U.*, 7th of August 1985, L 210/29, art. 1.

³⁷¹ Council Directive 85/374 of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, *O.J.E.U.*, 7th of August 1985, L 210/29, art. 3.1, 3.2.

³⁷² *Ibid.*, art. 3.3; The PLD differentiates between strict liability and fault-based rules in accordance with the position and role of an actor along the supply chain. Actors situated upstream in the supply chain are subject to strict liability, while those downstream are subject to fault-based liability unless they are unable to disclose the identity of upstream actors (i.e. producers or importers), see S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 16.

³⁷³ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 4.15.

and repairment service providers may be classified as economic operators and subjected to product liability under certain conditions.³⁷⁴

First, as in the 1985 PLD, liability can be attributed to the manufacturer of a defective product or component for the damage caused by that product or component.³⁷⁵ In addition, since the definition of "*product*" has been expanded to include software and digital manufacturing files, the range of manufacturers that may be covered by the provisions of the rPLD is also wider as it includes software developers and providers of digital manufacturing files that, for example deliver data that has a functional impact on the product. Similarly, as an interconnected digital service that has a functional impact on the performance of a product is also defined as a "*component*" of that product³⁷⁶, its provider would be considered a component manufacturer and would be subject to product liability if its service causes damage.³⁷⁷

Second, the rPLD adapts the set of parties that may be liable to the context of cross-border transactions, in cases where, for example, a local manufacturer cannot be identified. If the manufacturer is established outside the EU, which means that the victim cannot easily bring a claim against him in the national court where he is domiciled, the importer of the defective product or component into the territory of the EU would, alternatively, be liable.³⁷⁸ In addition, the authorised representative acting on behalf of the foreign manufacturer when carrying out certain tasks in the EU would also be subject to product liability in such cases.³⁷⁹ If the claimant cannot identify either the importer or the authorised representative, the "*fulfilment service provider*" – that is "*any natural or legal person who, in the course of his business, offers at least two of the following services: the storage, packaging, addressing and dispatch of a product, without taking the product into his possession, with the exception of postal services*"³⁸⁰ – would, ultimately, be held liable under the rPLD.³⁸¹ By doing so, EU policymakers seek to ensure that the claimant has a greater chance of identifying an EU-based entity against which to claim for the damage caused by the defective product. The rPLD is intended to exempt actors that merely provide postal services and to cover only those having a close and continuous relationship with manufacturers, importers or authorized representatives.³⁸² For example, if an online platform is responsible for the storage and dispatch of third-party products, it would be considered a fulfilment service provider under the revised PLD, except if it falls under the hosting exception of the DSA.³⁸³ On the other hand, if a party only stores third-party products while the packaging and dispatch are carried out by postal companies, it would not be considered a fulfilment service provider as it only provides one of the services referred to in Article 4(13).³⁸⁴

Third, the distributor who places a defective product on the market would be held liable unless he discloses the identity of one of the aforementioned actors within one month of receiving a request to do so from the injured party.³⁸⁵ Online platforms merely providing intermediary services – such as a mere conduit or as a catching

³⁷⁴ *Ibid.*, art. 8.1.

³⁷⁵ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 16.

³⁷⁶ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 4.4.

³⁷⁷ *Ibid.*

³⁷⁸ *Ibid.*, art. 8.1(c).

³⁷⁹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 8.1(c).

³⁸⁰ *Ibid.*, art. 4.13.

³⁸¹ *Ibid.*

³⁸² EUROPEAN LAW INSTITUTE, "ELI Feedback on the European Commission's Proposal for a Revised Product Liability Directive", 2023, p. 12.

³⁸³ G. SPINDLER, "Different Approaches for Liability of Artificial Intelligence – Pros and Cons – the New Proposal of the EU Commission on Liability for Defective Products and AI Systems", *op. cit.*, p. 17; Regulation (EU) 2022/2065 of the European Parliament and of the Council of 19 October 2022 on a Single Market For Digital Services, *O.J.E.U.*, L.277/1, 27th of October 2022, art. 6.3.

³⁸⁴ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 17.

³⁸⁵ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 8.3.

and/or hosting service – that facilitate the conclusion of distance contracts between distributors or manufacturers and consumers would not be considered as distributors.³⁸⁶ However, online platforms may incur liability under two distinct circumstances. First, liability would arise where online platforms assume the role of a manufacturer, importer, authorised representative, fulfilment service provider, or distributor in relation to a defective product.³⁸⁷ Second, platforms may also be held liable under conditions analogous to those applicable to distributors. This would occur where the platform facilitates the conclusion of distance contracts between consumers and traders and presents the product – or otherwise enables the transaction – in a manner that would lead the average consumer to believe that the product is being provided either by the platform itself or by a trader operating under its authority or control. In such instances, liability would be contingent upon the platform's failure to promptly identify a relevant economic operator established within the Union.³⁸⁸ By doing so, the rPLD enhances the protection of EU consumers by adapting to the changing global value chain.³⁸⁹

Fourth, the rPLD adapts the notion of economic operators to the features of the circular economy by introducing liability for actors that "*substantially modify*"³⁹⁰ an existing product. Following the placement of a product on the market, any entity that introduces a substantial modification that is beyond the control of the original manufacturer is deemed to be the manufacturer of the modified product and subject to the same strict product liability as the original manufacturers.³⁹¹ Moreover, given that products may be designed to allow modifications via software changes, including updates and upgrades, the same principles should govern such software-based modifications as those applicable to physical alterations.³⁹² The determination of whether a modification is substantial is to be made according to the relevant EU and national laws. However, where no criteria are laid down, examples of such modifications include upgrades that alter the product's intended functionality or affect its compliance with relevant safety requirements.³⁹³ In contrast, an entity that exclusively conducts essential repairs to restore or preserve the product's functionality will not be categorised as an economic operator that makes substantial modifications.³⁹⁴ Economic operators who undertake substantial modifications will be exempt from product liability, provided they can demonstrate that any alleged damage arise from a component not affected by their modifications.³⁹⁵ Ultimately, since substantially modified products are essentially new products, a new expiry period for the liability of economic operators would start to run after a product has been substantially modified and has subsequently been made available on the market or put into service, for example as a result of remanufacturing.³⁹⁶ In particular, where substantial modifications arise through a software update, upgrade, or due to the continuous learning capabilities of an AI system, the product should be considered to have been made available on the market or put into service when the modification is effectively implemented.³⁹⁷

4.7.5 Simplifying access to justice

Both the former and revised PLD place the burden of proof on the claimant, who must establish three elements:

³⁸⁶ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 17.

³⁸⁷ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, Recital 38.

³⁸⁸ *Ibid.*

³⁸⁹ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 17.

³⁹⁰ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, Recital 39, art. 4(18).

³⁹¹ *Ibid.*, art. 8.2.

³⁹² *Ibid.*, Recital 40.

³⁹³ *Ibid.*, Recital 39.

³⁹⁴ *Ibid.*

³⁹⁵ *Ibid.*, art. 11.1(g).

³⁹⁶ *Ibid.*, Recital 58.

³⁹⁷ *Ibid.*, Recital 40.

the defectiveness of the product, the damage suffered, and the causal link between the defect and the harm.³⁹⁸ This can prove particularly challenging in practice due to the inherent imbalance between the parties involved: manufacturers typically possess detailed knowledge of their products, whereas victims may be unaware of the product's existence.³⁹⁹ This asymmetry of information becomes even more pronounced in the context of AI. Given the complex and often opaque nature of AI systems, the average individual is unlikely to understand their functioning. As a result, claimants will frequently lack the expertise and access to evidence required to demonstrate that an AI system is defective.⁴⁰⁰

However, the European Court of Justice, as well as courts in several Member States, have consistently sought to redress this imbalance between claimants and manufacturers by informally lowering the claimant's burden of proof. For example, judges have at times accepted the occurrence of harm during the normal use of a product as sufficient indication of a defect.⁴⁰¹ This effectively means that claimants are not always required to provide direct evidence of the defect itself; instead, indirect evidence may suffice. In the United States, this concept is known as the "*malfunction doctrine*"⁴⁰², under which it is enough to show that the AI system malfunctioned during normal use and that no plausible alternative causes for the malfunction exist.⁴⁰³

Two options were considered during the development of the rPLD proposal. One suggested that the claimant should remain responsible for demonstrating causation, but that they should be provided complementary measures in order to obtain the necessary information. Furthermore, defectiveness and causation could be presumed under certain circumstances.⁴⁰⁴ The second, more drastic, approach would be to reverse the burden of proof and to remove the state-of-the-art defence. This would result in the producer being held liable even in instances where state-of-the-art knowledge at the time of product placement could not have enabled the detection of defectiveness.⁴⁰⁵ After thorough consideration, the lawmakers behind the proposal for a revised PLD selected the first one.

4.7.5.1 Disclosure of evidence

From an *ex-ante* point of view, the New Legislative Framework⁴⁰⁶ contains a series of requirements designed to ensure that only safe products can be placed on the internal market. This legislative framework is accompanied by a series of safety regulations, which mandate the affixing of CE markings on products and the provision of necessary information to both authorities and consumers.⁴⁰⁷ However, these *ex-ante* requirements

³⁹⁸ Council Directive 85/374 of 25 July 1985 on the approximation of the laws, regulations and administrative provisions of the Member States concerning liability for defective products, *O.J.E.U.*, 7th of August 1985, L 210/29, art. 4; Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 10.

³⁹⁹ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 26; T. VERHEYEN, *Eenzijdige beheersing van het aansprakelijkheidsrisico*, *op. cit.*, p. 562.

⁴⁰⁰ J. DE BRUYNE *et al.*, *Ibid*; P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 17.

⁴⁰¹ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 26; T. VERHEYEN, *Eenzijdige beheersing van het aansprakelijkheidsrisico*, *op. cit.*, p. 562; T. VERHEYEN, "Full Harmonization, Consumer Protection and Product Liability: A Fresh Reading of the Case Law of the ECJ", *European Review of Private Law*, 2018, Vol. 26, pp. 119 – 140; Judgment of the Court of 20 November 2014, *Novo Nordisk Pharma GmbH v. S*, C310/13, EU:C:2014:2385; Judgment of the Court of 5 March 2015, *Boston Scientific Medizintechnik GmbH v AOK Sachsen-Anhalt – Die Gesundheitskasse and Betriebskrankenkasse RWE*, Joined Cases C-503/13 and C-504/13, EU:C:2015:148.

⁴⁰² J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 26; T. VERHEYEN, *Eenzijdige beheersing van het aansprakelijkheidsrisico*, *op. cit.*, p. 565.

⁴⁰³ J. DE BRUYNE *et al.*, *Ibid*; C. BEGLINGER, "A Broken Theory: The Malfunction Theory of Strict Product Liability and the Need for a New Doctrine in the Field of Surgical Robotics Note", *Minnesota Law Review*, 2019, pp. 1056 – 1057.

⁴⁰⁴ *Ibid.*, p. 9.

⁴⁰⁵ *Ibid.*, pp. 9 – 10.

⁴⁰⁶ New Legislative Framework, available on https://single-market-economy.ec.europa.eu/single-market/goods/new-legislative-framework_en, accessed 31st of March 2025.

⁴⁰⁷ For example: "Manufacturers shall ensure that their toys bear a type, batch, serial or model number or other element allowing their identification, or, where the size or nature of the toy does not allow it, that the required information is provided on the packaging or in a document accompanying the toy", see Directive 2009/48/EC of the European Parliament and of the Council of 18 June 2009 on the safety

offer scant guidance on the disclosure of relevant information *ex post*, that is, in circumstances where claimants seek to substantiate the claim that a particular product has caused them harm.⁴⁰⁸

The rPLD contains rules on the disclosure of evidence, as outlined in Article 9 and illustrated by Appendix 2. Member States must ensure that national courts are empowered, upon receiving a request from an injured person, to order defendants to disclose the evidence at their disposal, on condition that the injured person has presented: "(...) *facts and evidence sufficient to support the plausibility of their claim*".⁴⁰⁹ This mechanism can also be used by the defendant as Member States shall also ensure that: "(...) *at the request of the defendant that has presented facts and evidence sufficient to demonstrate the defendant's need for evidence for the purpose of countering a claim for compensation, the claimant is required, in accordance with national law, to disclose relevant evidence that is at the claimant's disposal*".⁴¹⁰

The principle of proportionality is emphasised in this mechanism as every request made by a claimant will not result in a disclosure of evidence. Indeed, national courts will have to examine the facts and evidence in order to determine the plausibility of the claim for compensation. In instances where the court deems the alleged facts are not sufficient to demonstrate the plausibility of the claim before it, it will be entitled to refuse the claimant's request for disclosure.⁴¹¹ Moreover, under the rPLD, the obligation to disclose evidence is exclusively limited to defendants who are parties to the legal proceedings⁴¹², and the disclosure requirement pertains only to evidence that is "*at the disposal*"⁴¹³ of the defendants. If the evidence is not in the possession of the defendant, the claimant cannot request that the court order its disclosure unless the third parties involved can be joined to the proceedings.⁴¹⁴ Furthermore, the court has the duty to limit disclosure to that which is necessary and proportionate.⁴¹⁵ National courts must consider the legitimate interests of all parties, particularly the right to retain confidential information and trade secrets.⁴¹⁶ Specifically, in instances where the information to be disclosed is alleged to be a trade secret, Member States are obliged to ensure that national courts are empowered to take specific measures to preserve its confidentiality.⁴¹⁷ The failure to comply with the disclosure requirements set out by a national court will result in a presumption of defectiveness⁴¹⁸ and, given the incorporation of maximum-harmonisation provisions within the PLD across all Member States, this presumption cannot be refutable in light of national laws.⁴¹⁹

A mechanism of disclosure of evidence is a step in the right direction but it would not fully address the vulnerable position of the claimants, unless appropriate safeguards were established to support the interpretation and analysis of the information disclosed by the defendant⁴²⁰, as this process will often be complicated and costly,

of toys, L 170/1, art. 4.5; S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 19.

⁴⁰⁸ S. LI and B. SCHÜTTE, *Ibid.*

⁴⁰⁹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 9.1.

⁴¹⁰ *Ibid.*, art. 9.2.

⁴¹¹ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 19.

⁴¹² The rPLD does not harmonise the rules on disclosure of evidence related to: pre-trial procedures, how a specific request for evidence must be, third parties, cases of declaratory actions and sanctions for non-compliance with the obligations to disclose evidence, see Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, Recital 43.

⁴¹³ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 9.2.

⁴¹⁴ *Ibid.*, Recital 43.

⁴¹⁵ *Ibid.*, art. 9.3.

⁴¹⁶ *Ibid.*, art. 9.4.

⁴¹⁷ *Ibid.*, art. 9.5.

⁴¹⁸ *Ibid.*, art. 10.2.(a).

⁴¹⁹ S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 20.

⁴²⁰ J. DE BRUYNE, O. DHEU and C. DUCING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 5.

especially for weaker parties.⁴²¹ The fact that data is made available to the claimant does not appear to be sufficient *per se*, as it could simplify the position of the defendant who could give a gigantic amount of data and leave the injured party with the task of: "(...) *identifying the relevant portion (if it exists) of information and providing an interpretation of it*".⁴²² Compared to the text of the Proposal, Article 9(6) of the rPLD appears to address the concern related to the interpretation of the evidence disclosed by the defendant, as it requires Member States to: "(...) *ensure that evidence is presented in an easily accessible and easily understandable manner, if such presentation is deemed proportionate*".⁴²³ However, with respect to the scope of information to be disclosed, the rPLD only states that the defendant must provide "*relevant evidence*"⁴²⁴ that is within their possession, and that courts must ensure such access is limited to what is necessary and proportionate to avoid non-specific searches for information that is not directly relevant to the proceedings and protecting confidential information.⁴²⁵ It thus remains to be seen how courts will interpret the notion of "*relevant evidence*" in practice, and specifically, whether defendants may comply by disclosing an overwhelming volume of documents with the aim of discouraging claimants.⁴²⁶

4.7.5.2 The rebuttable presumption of defectiveness and causal link

Given the considerable challenges that claimants face in substantiating defects and their causal links, the rPLD incorporates provisions that seek to alleviate the evident burden of proof. As exemplified by Appendix 3, Article 10.2 stipulates that a national court is required to presume defectiveness or a causal link when any of the following three criteria are met: Firstly, the defendant has failed to disclose evidence as ordered by a national court under Article 9.1; secondly, the claimant can establish that the product is non-compliant with the mandatory safety requirements⁴²⁷ laid down by EU or national laws; thirdly, the damage was caused by an obvious malfunction under ordinary circumstances or during reasonably foreseeable use.⁴²⁸

Proving non-compliance with mandatory safety requirements and obvious malfunction can be difficult for claimants because of the increasingly sophisticated nature of products.⁴²⁹ In instances where a product is equipped with AI capabilities, claimants may be required to engage the services of AI specialists to assess its output.⁴³⁰ In addition, the precise interpretation of terms such as "*obvious malfunction*", "*reasonably foreseeable use*", and "*ordinary circumstances*" will require further clarification. Recital 46 provides some guidance on these concepts. It explains that a "*reasonably foreseeable use*" includes not only the intended use of a product, as indicated by the economic operator placing it on the market, but also the ordinary use implied by the product's design and construction, as well as any use that can reasonably be anticipated based on lawful and predictable human behaviour.⁴³¹ Moreover, while the definition of an obvious malfunction remains absent within the rPLD, Recital 46 employs the example of a glass bottle exploding during routine usage to elucidate the concept of an obvious malfunction. However, in the digital age, this notion may be considerably more intricate than this

⁴²¹ A. BERTOLINI, "Artificial intelligence and civil liability", *op. cit.*, p. 84.

⁴²² *Ibid.*

⁴²³ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 9.6.

⁴²⁴ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 9.1.

⁴²⁵ *Ibid.*, Recital 42.

⁴²⁶ A. BERTOLINI, "Artificial intelligence and civil liability", *op. cit.*, p. 84.

⁴²⁷ Regulation (EU) 2023/988 of the European Parliament and of the Council of 10 May 2023 on general product safety, *O.J.E.U.*, L 135/1, 23rd of May 2025.

⁴²⁸ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 10.2.

⁴²⁹ *Ibid.*, Recital 46.

⁴³⁰ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 22.

⁴³¹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 10.2.

example. In practice, the definition of obvious malfunctions will be determined on a case-by-case basis by national courts, which can engender legal uncertainties that parties could not reasonably foresee *ex ante*.⁴³²

National courts are also instructed under the rPLD to presume the existence of a causal link if two conditions are met⁴³³: First the defectiveness of the product must be either presumed if any of the three previously mentioned conditions outlined in Article 10.2 are fulfilled, or demonstrated through the presentation of evidence proving that the product *"does not provide the safety which the public at large is entitled to expect"*⁴³⁴; second, the claimant must also prove that the damage caused by the defective product is: *"of a kind typically consistent with the defect in question"*.⁴³⁵ The question of how to establish this *"typical consistency"*⁴³⁶ remained unresolved under the Proposal, prompting some authors to interpret this as a paraphrased representation of the prerequisite for *prima facie* evidence.⁴³⁷ The final version rPLD appears to have taken previous criticisms into account, and now provides that: *"Where it has been established that a product is defective and the kind of damage that occurred is, based primarily on similar cases, typically caused by the defectiveness in question, the claimant should not be required to prove the causal link and its existence should be presumed"*.⁴³⁸ In addition, a key point to emphasise is the defendant's right to challenge and refute the presumptions of defectiveness and causation.⁴³⁹

Article 10.4 has the potential to be the most disruptive provision. While Article 10.2 and 10.3 delineates the criteria for presuming defectiveness and the existence of a causal link, the claimant may encounter *"excessive difficulties"*⁴⁴⁰ in meeting the evidentiary burden.⁴⁴¹ As depicted in Appendix 4, the rPLD attempts to address these potential issues and to ensure access to justice by easing the conditions under which defectiveness and the existence of a causal link may be presumed.⁴⁴² For example, in a scenario where a product operates through machine-learning models, the opacity of the algorithm can make it truly challenging to ascertain whether the product meets the applicable mandatory requirements or whether it should be considered defective⁴⁴³, even if the relevant economic operator provides the requisite evidence as instructed.⁴⁴⁴ In such circumstances, a court would be required to presume the existence of a product defect or the causal link between defect and harm, or even both elements, provided that: *"the claimant faces excessive difficulties, in particular due to technical or scientific complexity, in proving the defectiveness of the product or the causal link between its defectiveness and the damage, or both; and the claimant demonstrates that it is likely that the product is defective or that there is a causal link between the defectiveness of the product and the damage, or both"*.⁴⁴⁵ Therefore, Article 10.4 of rPLD should be interpreted as a reduction of the standard of proof, whereby the claimant must

⁴³² S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 20.

⁴³³ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 10.2.

⁴³⁴ *Ibid.*, art. 7.1.

⁴³⁵ *Ibid.*, art. 10.3.

⁴³⁶ *Ibid.*

⁴³⁷ G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, p. 31.

⁴³⁸ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, Recital 47.

⁴³⁹ *Ibid.*, art. 10.5.

⁴⁴⁰ The requirement of "excessive difficulties" is unclear, in particular with regard to the point of reference – for whom and with regard to what does it have to be "excessively difficult"? The claimant individually under the specific circumstances or objectively?, see EUROPEAN LAW INSTITUTE, "Feedback on the European Commission's Proposal for a Revised Product Liability Directive", 2022, pp. 20-21.

⁴⁴¹ G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, p. 31.

⁴⁴² S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 21.

⁴⁴³ G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, p. 31.

⁴⁴⁴ J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 5.

⁴⁴⁵ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 10.4.

demonstrate that it is *"more likely than not"*⁴⁴⁶ that the damage was caused by the product's defect.⁴⁴⁷

Technical or scientific complexity will be determined by national courts on a case-by-case basis, taking into account various factors, including: *"the complex nature of the product, (...) such as machine learning; the complex nature of the information and data to be analysed by the claimant; and the complex nature of the causal link, such as a link between a pharmaceutical or food product and the onset of a health condition or a link that, in order to be proven, would require the claimant to explain the inner workings of an AI system"*.⁴⁴⁸ While claimants ought to provide arguments to demonstrate such difficulties, *"proof of such difficulties should not be required"*.⁴⁴⁹ For instance, in claims involving AI systems, the claimant should not be expected to detail the specific technical characteristics of the system or to demonstrate how those characteristics complicate the establishment of a causal link. Nonetheless, the defendant should retain the right to contest all aspects of the claim, including the assertion that excessive difficulties are present.⁴⁵⁰

Eventually, while this presumption may help ease the evidentiary burden for claimants, its effectiveness may be more limited than anticipated. First, the presumption applies only when the claimant struggles to meet the standard of proof due to the technical or scientific complexity of the product. The rPLD's Article 9 attempts to address this issue by imposing disclosure obligations on manufacturers. Yet to trigger this obligation, claimants must still present a plausible case supported by sufficient factual evidence; an onerous task for individuals lacking technical knowledge. Moreover, even with access to relevant data, claimants will likely need expert assistance to interpret it correctly.⁴⁵¹ Second, Article 10.4 reduces the claimant's standard of proof rather than shifting the burden entirely.⁴⁵² Instead of proving defectiveness and causality with reasonable certainty – as required under traditional tort law – the claimant must only demonstrate that both are probable. Although this lower threshold enhances the likelihood of success, it still requires a degree of technical understanding and evidentiary support that may be out of reach for many individuals. Consequently, litigation under the rPLD could remain prohibitively costly, potentially deterring certain injured parties from seeking redress.⁴⁵³

4.8. Product liability and innovation

In order to achieve a balanced approach to the issue of AI liability, it is essential to consider the facilitation of compensation for injured persons, in addition to the provision of a framework that is conducive to the fostering of innovation and development within the AI sector.⁴⁵⁴

4.8.1 The alignment of product liability duties with the AI Act

One could argue that a breach of the AI Act should serve as a *"necessary and sufficient condition for liability"*.⁴⁵⁵ This would significantly reduce compliance, administration and enforcement costs, as all stakeholders would

⁴⁴⁶ G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, p. 31; The final draft removed a part of the Article requiring the presentation of "sufficiently relevant evidence" which, in most legal systems, entails more than merely a preponderance of evidence. See EUROPEAN LAW INSTITUTE, "Feedback on the European Commission's Proposal for a Revised Product Liability Directive", 2022, pp. 20-21.

⁴⁴⁷ *Ibid.*; S. LI and B. SCHÜTTE, "The Proposal for a Revised Product Liability Directive: the Emperor's New Clothes?", *op. cit.*, p. 21.

⁴⁴⁸ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, Recital 48.

⁴⁴⁹ *Ibid.*

⁴⁵⁰ *Ibid.*

⁴⁵¹ J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 15; P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, pp. 18 – 19.

⁴⁵² Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, Recital 48.

⁴⁵³ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 30; HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, pp. 18; 19.

⁴⁵⁴ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 33.

⁴⁵⁵ *Ibid.*

only have to internalise and comply with one set of rules. Any divergence creates legal and compliance costs, as well as administrative friction, which can quickly become restraining, especially for start-ups and SMEs. As a consequence, this would further concentrate the digital economy in the hands of companies with significant market power and wealthy enough to pay for legal advice, compliance tools and related insurance, which, from the standpoint of competition, does not seem acceptable.⁴⁵⁶

A complete alignment of product liability with the AI Act would also imply that compliance with the latter would provide companies with complete protection against civil liability. Yet this is only defensible if the AI Act comprehensively and suitably addresses all AI related risks with respect to individual harm eligible for compensation under the civil liability framework, which cannot be ascertained today. Indeed, the AI Act already overlooks some critical issues such as sustainability and technology continues to advance at a pace that outstrips legal development, giving rise to new risks and potential harms that cannot be swiftly addressed by law. Therefore, non-compliance with the AI Act may serve as a sufficient, though not necessary, condition for establishing defectiveness and a breach of the duty of care under the rPLD and AILD Proposals, respectively.⁴⁵⁷

4.8.2 Legal certainty

In light of the present circumstances, wherein a complete alignment with the AI Act is not deemed desirable at this point, it becomes imperative to nurture innovation by ensuring legal certainty. For AI developers, the presence of legal uncertainty can exert a discouraging influence and, conversely, legal certainty is conducive to ensuring and maintaining compliance. This enables them to determine whether to fulfil certain criteria themselves or to outsource compliance to specialised companies, many of which are currently emerging within the AI ecosystem. This dynamic has the potential to liberate resources, enabling the pursuit of both technical and economic growth. Besides, it mitigates the risk of over-deterrent fears of liability, which may be present among software engineers and computer scientists who are not trained in law.⁴⁵⁸

In order to achieve legal certainty, it is essential to make full and efficient use of the harmonised standards and specifications set out in Articles 40 and 41 of the AI Act, which should be used to define: "(...) *safe harbours for developers using, to the best extent possible, state-of-the-art measures and metrics with quantitative thresholds*".⁴⁵⁹ For instance, the ambiguous references to training data as being "*relevant, representative, and to the best extent possible, free of errors and complete*"⁴⁶⁰ and possessing "*appropriate statistical properties*"⁴⁶¹, to "*sufficiently transparent*"⁴⁶² systems, or to an "*appropriate level of accuracy, robustness, and cybersecurity*"⁴⁶³ should be translated into use-case-specific quantitative measures.⁴⁶⁴

The establishment of safe harbours would provide legal certainty for both AI developers and users. Those opting to deploy AI that does not fall within the defined safe harbours would do so at their own risk. Alternatively, quantitative thresholds could be set to establish a presumption of non-compliance, thereby delineating areas of non-compliance (red zones), compliance (green zones), and uncertain compliance (grey zones).⁴⁶⁵ In this

⁴⁵⁶ *Ibid.*; Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828, O.J.E.U., L 265/1, 12th October 2022, Recital 3.

⁴⁵⁷ *Ibid.*

⁴⁵⁸ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 34.

⁴⁵⁹ P. HACKER, "A legal framework for AI training data – from first principles to the Artificial Intelligence Act", *Law Innovation and Technology*, Vol. 13, 2021, p. 299.

⁴⁶⁰ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, O.J.E.U., 12th of July 2024, art. 10.3

⁴⁶¹ *Ibid.*

⁴⁶² *Ibid.*, art. 13.1.

⁴⁶³ *Ibid.*, art. 15.1.

⁴⁶⁴ A. LINDHOLM *et al.*, *Machine learning – A First Course for Engineers and Scientists*, Cambridge University Press, 2022, p. 88.

⁴⁶⁵ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 34.

context, developers would be strongly advised to adjust their models and strategies accordingly. This approach gains additional importance in light of the final version of the AI Act, which now explicitly references fundamental rights, not only within the recitals but also in the articles and obligations.⁴⁶⁶ While fundamental rights serve as the cornerstone of the rule of law within the European Union, their inherent conceptual vagueness makes them ill-suited for direct integration into secondary AI regulations. Specifically, the implementation of rules grounded in fundamental rights is problematic due to the lack of clarity in applying them to specific scenarios. In this regard, the creation of safe harbours becomes particularly critical.⁴⁶⁷

4.9. Liability along the value chain

Currently, redress in cases of joint liability remains largely governed by national law. Yet the rPLD acknowledges joint liability for multiple economic operators⁴⁶⁸ but introduces exemptions to support innovation by micro and small enterprises.⁴⁶⁹ While intended to shield smaller players from disproportionate liability exposure, the practical effectiveness of this mechanism is questionable – particularly given the uncertainty over whether manufacturers with large market power would agree to assume this liability in practice.⁴⁷⁰

The following tension lies at the core of the liability dilemma: effective compensation necessitates that the final actor in the chain – typically the deployer – be held liable where national liability conditions are met, as they are often the most accessible point of contact for injured parties. However, it is equally important that upstream actors also bear responsibility under certain conditions. This dual-track approach is crucial not only due to potential insolvency of the downstream entity but also because fault may reside upstream. Traditionally, downstream entities have been permitted to seek recourse from upstream actors who contributed to the damage or delivered defective components.⁴⁷¹ Yet the concentration of market power upstream – particularly among developers of foundational or general-purpose AI models – raises concerns because some dominant actors could exploit their position to impose contractual waivers that prevent downstream counterparts from seeking recourse, undermining fairness and accountability in the value chain.⁴⁷² Recognising these risks, the European Parliament, explicitly called on the Commission to consider legal provisions banning contractual clauses that negate recourse rights, particularly in B2B and Business-to-Administration (B2A) contexts. This call has gained urgency with the proliferation of GPAIs, which often undergo further modification and fine-tuning by multiple parties downstream. Additionally, cross-border AI liability claims are complicated by the interplay of national tort laws and international private law. To address these challenges and enhance redress mechanisms, several, potentially complementary, policy options can be put forward.

One possible approach is to strengthen the position of SMEs through a mechanism similar to the one found in Article 12.2 of the rPLD. This provision allows SMEs to shift liability for defective software components to the manufacturers who integrate these components into broader systems, thereby ensuring that liability towards the injured party is maintained while safeguarding the innovative potential of smaller actors. However, the rPLD

⁴⁶⁶ See for example, Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024, art. 6; 9; 14; 27.

⁴⁶⁷ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 34.

⁴⁶⁸ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 12.1.

⁴⁶⁹ *Ibid.*, art. 12.2.

⁴⁷⁰ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 22.

⁴⁷¹ European Parliament resolution of 20 October 2020 with recommendations to the Commission on a civil liability regime for artificial intelligence, C 404/107, art. 11 – 12.

⁴⁷² C. S. HUTCHINSON, "Potential abuses of dominance by big tech thought their use of Big Data and AI", *Journal of Antitrust Enforcement*, 2022, Vol. 10, pp. 443 – 468.

currently leaves this mechanism to the discretion of contractual agreement, which significantly weakens its effectiveness.⁴⁷³ To prevent this voluntary nature from becoming a loophole in settings characterised by unequal bargaining power, such protections should be binding and non-derogable by contract.⁴⁷⁴

A second, complementary option would be to establish a rebuttable presumption of equal liability shares among all actors in the AI value chain who have contributed to the harm.⁴⁷⁵ Under this model, each participant – whether upstream developers, component integrators, or downstream deployers – would, by default, be presumed to bear an equal share of responsibility. If any party believes that its contribution to the harm was significantly greater or lesser than that of others, the burden of proving such disproportionality would rest with that party. This approach could substantially reduce the complexity and cost of litigation by providing a clear, predictable starting point, while preserving the possibility of more nuanced adjudication where warranted by the facts of the case. To avoid circumvention through contractual clauses, the presumption and its accompanying allocation mechanism should also be made binding and immune to modification through private agreements.⁴⁷⁶

A third policy response would be to protect downstream actors against abusive contractual practices that strip them of the ability to seek recourse from upstream parties. In markets where a few dominant players control the development of GPAIs, there is a significant risk that these actors may impose liability waivers or severely limit the ability of downstream entities to pursue redress.⁴⁷⁷ To counteract this, any contractual clause that waives or substantially restricts a downstream actor's right to seek recourse could be prohibited. Such clauses would be deemed null and void, and the relevant provisions must be binding to ensure their effectiveness in practice. This approach would not only ensure fair distribution of liability along the AI supply chain but also align with broader developments in EU digital law. For example, Article 13.5(a) of the Data Act already includes a similar prohibition, aimed at protecting parties from inappropriate liability limitations in contractual relationships. Likewise, Article 41 of the Data Act empowers the European Commission to develop standard contractual clauses, a model that could be replicated to support fair allocation of liability in the AI domain.⁴⁷⁸

⁴⁷³ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 22.

⁴⁷⁴ P. HÄCKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 34.

⁴⁷⁵ B. BOTERO ARCILA, *AI Liability Along the Value Chain*, *op. cit.*

⁴⁷⁶ P. HÄCKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 35.

⁴⁷⁷ L. JAROVSKY, "AI Compliance Challenges: Liability, Transparency and Fairness, with Philipp Häcker", YouTube, 27th of March 2025, available on <https://www.youtube.com/watch?v=7jjcxDrSyTw>, accessed 13th of May 2025.

⁴⁷⁸ P. HÄCKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 35.

5. The AILD Proposal

5.1. The context behind the AILD proposal

As previously outlined, the European Commission introduced two key legislative initiatives to modernize and harmonize liability rules in light of the challenges posed by AI. While the rPLD seeks to update the product liability regime for defective products, the AILD was designed to address the fault-based liability gap, that is, cases where harm caused by AI systems falls outside the scope of product liability. Overall, this analysis seeks to place the AILD within the wider context of the EU's efforts to establish a coherent and future-proof liability framework capable of addressing the unique risks and legal uncertainties associated with increasingly autonomous and opaque AI systems.

Prior to the advent of AI, efforts to harmonise the law of non-contractual liability at the EU level had limited success. Despite the development of influential soft law instruments by academic groups – such as the Principles of European Tort Law⁴⁷⁹ and the Draft Common Frame of Reference⁴⁸⁰ – Member States have never reached a consensus on the harmonisation of damages liability.⁴⁸¹ As a result, the prospect of establishing a harmonised liability regime specifically for harm caused by AI technologies is arguably even more complex. To date, harmonisation has occurred only in a limited number of areas through sector-specific EU legislation, most notably the GDPR and the PLD.⁴⁸² One of the key barriers to harmonisation lies in the substantial divergence among Member States regarding the interpretation of fundamental legal concepts – such as damage, fault, and causation – as well as procedural aspects like the burden of proof. This divergence not only complicates efforts to develop uniform liability rules but also raises questions about the necessity and practicality of full harmonisation.⁴⁸³

In light of these challenges, the European Commission adopted a staged approach to harmonising AI-related liability. While the AILD represented a preliminary step toward a harmonised framework for AI-related liability, it did not seek to establish substantive liability rules at this stage. The proposal refrained from introducing a unified basis for claims by injured parties and deliberately avoided harmonising core legal concepts such as fault, damage, or causation.⁴⁸⁴ Rather, as set out in Article 1, the Directive focused narrowly on procedural aspects, notably establishing common rules for the disclosure of evidence and the burden of proof in claims involving AI systems. By doing so, the AILD aimed to facilitate access to justice, in line with broader obligations under EU law.⁴⁸⁵ Importantly, the AILD was framed as a minimum-harmonisation instrument, meaning that Member States would have retained the discretion to maintain or introduce more stringent national rules than those provided in the directive, which reflects both the legal diversity among Member States and the political sensitivities surrounding the harmonisation of tort law.⁴⁸⁶

5.2. The scope of application of the AILD proposal

Pursuant to Article 1.2 of the AILD, the directive's scope was narrowly defined by three cumulative conditions and was intended to apply to: *"non-contractual fault-based civil law claims for damages, in cases where the*

⁴⁷⁹ EUROPEAN GROUP ON TORT LAW PRINCIPLES, *Principles of European Tort Law*.

⁴⁸⁰ C. VON BAR *et al.*, *Principles, Definitions and Model Rules of European Private Law – Draft Common Frame of Reference*, Sellier, 2009.

⁴⁸¹ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *Technology and Regulation*, 2024, Vol. 2024, p. 144.

⁴⁸² *Ibid.*

⁴⁸³ M. FAURE, "The harmonisation of EU tort law: a law and economics analysis", in *Research Handbook on EU Tort Law* (under the dir. of P. GILIKER), Edward Elgar, 2017, pp. 415 – 442.

⁴⁸⁴ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*

⁴⁸⁵ *Ibid.*; Charter of Fundamental Rights of the European Union, O.J.E.U., 18th of December 2000, C 364/1, art. 47.

⁴⁸⁶ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, Recital 14.

damage is caused by an AI system."⁴⁸⁷ These restrictions were designed to limit the directive's reach and avoid interference with other areas of liability law, thereby preserving a balance between harmonisation and national legal autonomy.⁴⁸⁸

5.2.1 Fault-based civil liability claims

First, the AILD only governed fault-based civil liability claims, thereby excluding claims based on strict liability. This limitation was grounded in the assumption that procedural hurdles are generally lower in strict liability regimes, as claimants are not required to prove fault.

In practice, the actual applicability of the AILD would have largely depended on the claimant's procedural and legal strategy. In principle, the AILD could have applied in any case where the claimant elected to pursue a fault-based liability claim. This strategic choice may have been opted for in scenarios where the conditions for establishing strict liability – such as demonstrating a defect under product liability law – were more onerous than the requirements for fault-based claims. Additionally, claimants might have been incentivised to opt for a fault-based claim in cases where such provisions offered a broader scope of recoverable damages than those available under a strict liability regime. For instance, where a person suffered non-material harm – such as reputational damage or emotional distress – resulting from a defective AI-enabled product, relying on the product liability regime might be challenging, as it may not provide compensation for such harm.⁴⁸⁹ In such cases, claimants could have turned to national tort law provisions based on fault, thereby activating the procedural benefits envisaged by the AILD, such as access to evidence and alleviation of the burden of proof.⁴⁹⁰

Furthermore, unlike the rPLD, the AILD was not a consumer protection law. As such, it would have been applicable not only to individual consumers but also to professional users and legal persons, provided they qualified as potential claimants under national civil law. This broader scope highlighted the AILD's procedural orientation and its potential role in facilitating access to justice across a wide spectrum of liability disputes involving AI systems.⁴⁹¹

5.2.2 Non-contractual civil liability claims

Furthermore, the AILD did not apply to contractual liability. In practice, contractual and tortious liability may coexist when harm occurs, raising the recurring question of whether the existence of a contractual relationship between the claimant and the defendant precludes the application of tort law. Member States diverge significantly in their responses to this issue, and such differences inevitably affect the applicability of the AILD across jurisdictions.⁴⁹²

Some Member States – such as Belgium⁴⁹³, Romania⁴⁹⁴ and Hungary⁴⁹⁵ – adhere to the non-cumul principle, which precludes an injured party from invoking tort law provisions where a contractual relationship exists. In this context, once a contractual link is established, compensation can only be sought under contractual liability. As a result, in countries applying the non-cumul principle, the AILD could only have been invoked in the

⁴⁸⁷ *Ibid.*, art. 1.2.

⁴⁸⁸ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*

⁴⁸⁹ G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, pp. 51 – 53; Judgment of the Court of 10 June 2021, *VI v. Krone*, C-65/20, EU:C:2021:471.

⁴⁹⁰ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 145.

⁴⁹¹ *Ibid.*

⁴⁹² *Ibid.*

⁴⁹³ P. WERY, *Droit des Obligations I: Théorie générale des contrats*, Larcier, 2010, p. 545.

⁴⁹⁴ Romanian Civil Code, art. 1350, § 3.

⁴⁹⁵ Hungarian Civil Code, § 6:145.

absence of a contractual relationship between the claimant and the defendant, significantly limiting its scope. Without further clarification, affected parties in these jurisdictions would not have benefited from the procedural tools provided by the AILD, such as the right to request disclosure of relevant evidence held by the AI system provider or user.⁴⁹⁶

By contrast, other Member States – such as Austria, Germany, Italy – do not recognise the non-cumul principle.⁴⁹⁷ In these jurisdictions, claimants retain the discretion to pursue either contractual or tortious remedies, depending on which avenue offers a more favourable route to compensation. For instance, a party suffering purely economic loss may prefer to rely on contractual liability, as tort law often does not extend protection to purely financial interests. Conversely, for other types of damage – such as physical injury or emotional distress – claimants may turn to tort law, thereby potentially benefitting from the procedural facilitation provided by the AILD. From this perspective, the AILD would have had greater strategic value in Member States that allow such flexibility, enhancing access to justice.⁴⁹⁸

Notably, the AILD did not address the interaction between contract and tort law, which is understandable given its status as a minimum-harmonisation instrument. Nevertheless, this omission could have left injured parties in a disadvantaged position in jurisdictions that uphold the non-cumul principle. Ultimately, it would have fallen to the European Court of Justice to clarify whether the continued application of the non-cumul principle was compatible with EU law in the context of AI-related liability and to delineate the boundary between contract and tort for the purposes of applying EU procedural instruments such as the AILD.⁴⁹⁹

5.2.3 *Damage caused by an AI system*

The AILD was not designed to apply to all harms related to AI systems as it targeted cases where damage was directly caused by an AI system. As clarified in Recital 15, this meant the harm had to result from an output – or a failure to produce one – linked to a person's fault. The Directive thus required a clear causal connection between the fault, the AI system's output, and the resulting damage.⁵⁰⁰ Fault could occur during the development phase – such as in design or manufacturing – or during deployment, for instance through improper use. In either case, claimants could have opted for fault-based liability instead of strict liability, especially when seeking compensation for types of harm, like non-material damage, that product liability laws may not cover. Notably, the AILD also extended to non-professional deployers, even if they fell outside the scope of the AI Act.⁵⁰¹

Conversely, Recital 15 excluded situations where damage arose from a human decision made after receiving AI-generated information. If, for example, a doctor misinterpreted a diagnostic suggestion provided by an AI system, the human judgment was seen as breaking the causal chain.⁵⁰² In such cases, traditional liability rules were deemed sufficient as there was no black box problem, making therefore the AILD's procedural mechanisms unnecessary.⁵⁰³ The AILD's restriction to damage caused by fully automated decision-making raised a significant concern, as this limitation mirrored the language of Article 22(1) GDPR, which has long

⁴⁹⁶ J-B. BORGHETTI, "The borderlines of tort law in France", in *The Borderlines of Tort Law in France: Interactions with Contract Law* (under the dir. of M. MARTIN-CASALS), Intersentia, 2019, p. 136.

⁴⁹⁷ M. MARTIN-CASALS, "Comparative Report", in *The Borderlines of Tort Law in France: Interactions with Contract Law* (under the dir. of M. MARTIN-CASALS); *Ibid.*, p. 787.

⁴⁹⁸ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 145.

⁴⁹⁹ *Ibid.*

⁵⁰⁰ *Ibid.*

⁵⁰¹ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 145.

⁵⁰² P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, pp. 13 – 14.

⁵⁰³ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 145.

been criticized for enabling circumvention.⁵⁰⁴ Indeed, requiring full automation invites practices where human actors merely "rubberstamp"⁵⁰⁵ AI outputs without genuine scrutiny.⁵⁰⁶ Article 29 of the Working Party⁵⁰⁷ and recent court rulings⁵⁰⁸ rightly called for a broader understanding, where only meaningful human intervention, not superficial review, would break the chain of automation. Even when not deliberately used to bypass liability, human oversight does not necessarily resolve the issue. Oversight mechanisms can be prone to automation bias, where human reviewers over-rely on AI outputs.⁵⁰⁹ While the extent of this bias is still debated⁵¹⁰, its potential impact underlined how the AILD's scope was unduly narrow. In practice, important decisions involving AI – especially those based on outputs with low confidence scores – are routinely passed through some form of human review. Ironically, invoking the right to obtain human intervention, under Article 22(3) GDPR, could have excluded the decision from AILD's procedural protections, even if the intervention lacked substance.⁵¹¹

5.3. Disclosure of evidence

One of the key measures proposed by the AILD to ease the burden of proof was to facilitate claimants' access to relevant evidence, as Article 1.1.(a) stated that: *"This Directive lays down common rules on the disclosure of evidence on high-risk artificial intelligence (AI) systems to enable a claimant to substantiate a non-contractual fault-based civil law claim for damages"*.⁵¹² Article 3.1 of the AILD set out distinct procedures for evidence disclosure depending on who was making the request, and whether the request targeted the defendant or a third party. This subsection offers a critical analysis of the different scenarios the AILD sought to regulate in the context of evidence disclosure and highlights circumstances in which it may not have operated as effectively as the legislator had intended.

5.3.1 A claimant requesting evidence from the defendant

As illustrated by Appendix 5, the first scenario where evidence disclosure could arise under the AILD was when a claimant requested a national court to order the disclosure of evidence held by a provider or deployer who was already a defendant in ongoing litigation. This was expected to be the most common situation in practice.⁵¹³ In such cases, courts would have been required to balance the competing interests of all involved parties. Article 3.4 of the AILD stipulated that evidence disclosure should be limited to what is necessary and proportionate to the claim. Courts would have had to weigh both public and private interests, such as national security or the protection of trade secrets and confidential business information.⁵¹⁴ When confidential information would have been at stake, courts would have had to be equipped with effective tools to safeguard confidentiality upon request. Furthermore, Member States would have been obliged to ensure that parties ordered to disclose

⁵⁰⁴ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, pp. 13 – 14.

⁵⁰⁵ *Ibid.*, p. 13.

⁵⁰⁶ S. Wächter, B. Mittelstadt and L. Floridi, "Why a right to explanation of automated decision-making does not exist in the general data protection regulation", *International Data Privacy Law*, 2017, pp. 7 – 14.

⁵⁰⁷ Article 29 Data Protection Working Party, Guidelines on Automated individual decision-making and Profiling for the purposes of Regulation 2016/679.

⁵⁰⁸ J. Turner, "Amsterdam Court Upholds Appeal in Algorithmic Decision Making Test Case", available on <https://www.fountaincourt.co.uk/2023/04/amsterdam-court-upholds-appeal-in-algorithmic-decision-making-test-case-drivers-v-uber-and-ola/>, accessed 6th of May 2025.

⁵⁰⁹ S. Alon Barkat and M. Busuioc, "Human-AI Interactions in Public Sector Decision-Making: Automation Bias and Selective Adherence to Algorithmic Research and Theory", *Journal of Public Administration Research and Theory*, 2022, Vol. 20; S. Straub, "Deep Automation Bias: How to Tackle a Wicked Problem of AI?", *Big Data and Cognitive Computing*, 2021; P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 13.

⁵¹⁰ S. Alon Barkat and M. Busuioc, *Ibid.*

⁵¹¹ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 13.

⁵¹² Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 1.1(a).

⁵¹³ S. Li and B. Schütte, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 146.

⁵¹⁴ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 3.4, § 2.

evidence would have had access to: "*appropriate procedural remedies*."⁵¹⁵ However, the proposal left the definition of such remedies open, meaning that their precise nature would have had to be clarified in national implementations, or ultimately by the CJEU.⁵¹⁶

5.3.2 *A claimant requesting evidence from a third party*

In many cases, the claimant might have found that the necessary evidence was not held by the defendants, but by other providers or deployers who were not parties to the litigation. These third parties, while not at fault for the damage, could have held key information essential to proving the defendants' liability. For example, a patient suing a hospital for failing to properly supervise AI-powered diagnostic tools might have discovered that vital evidence, such as system logs, was held by the tool's provider.⁵¹⁷ Article 3.1 and 3.2 AILD addressed such situations by allowing claimants to request disclosure from third parties. However, unlike requests directed at defendants, these came with stricter requirements. Specifically, Article 3.2 required that claimants first make all proportionate efforts to obtain the evidence from the defendants. A third party could thus refuse disclosure by demonstrating that the claimant had a reasonable chance of securing the evidence from the actual defendant instead. Once again, the interpretation of the notion of "*all proportionate efforts*" would have been assessed by national court, on a case by case basis, or ultimately by the CJEU.⁵¹⁸

5.3.3 *A potential claimant requesting evidence*

Eventually, as depicted by Appendix 6, potential claimants were allowed to request evidence disclosure from providers or deployers even before initiating litigation. This mechanism aimed to reduce unnecessary legal proceedings and related costs.⁵¹⁹ However, to prevent abuse, this pre-litigation disclosure was subject to stricter conditions than in cases where litigation was already underway. Two key conditions had to be met before a national court could order disclosure. First, the potential claimant needed to have previously requested the evidence directly from the provider or deployer and received a refusal. Second, the claimant had to present sufficient facts and supporting material to demonstrate the plausibility of a claim for damages. Yet the notion of plausibility was not clearly defined and would likely have required interpretation by the CJEU.⁵²⁰

5.3.4 *The presumption of non-compliance*

If a court-ordered request for evidence disclosure was not followed, Article 3.5 AILD required national courts to presume that the defendant had failed to comply with a relevant duty of care established by EU or national law. In other words, claimants were to be treated as having proven the fact they sought to establish with the withheld evidence. However, this presumption was rebuttable, as the defendant could overturn it by presenting counter-evidence.⁵²¹

A major concern arising from Article 3.5 AILD was whether a failure to disclose evidence should have been automatically linked with a finding of fault. While some national legal systems are increasingly moving toward an objective notion of fault – where a subjective element like culpability is no longer strictly required – others

⁵¹⁵ *Ibid.*, Recital 20; art. 3.4, § 3.

⁵¹⁶ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 147.

⁵¹⁷ *Ibid.*

⁵¹⁸ *Ibid.*

⁵¹⁹ *Ibid.*; Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, Recital 17.

⁵²⁰ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 147.

⁵²¹ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, Recital 21; art. 3.5.

still retain the need to establish such a subjective component.⁵²² Thus, violating a duty of care does not necessarily equate to fault across all Member States. Whether non-compliance with an evidence disclosure order can be treated as sufficient to establish fault depends on national law. In some jurisdictions, such non-compliance may indeed be enough to infer fault. In others, it might only be one element among others, requiring additional proof to meet the threshold for fault under national legal standards.⁵²³ This divergence is further highlighted when compared to the rPLD, which only presumes defectiveness in cases of non-compliance with mandatory safety requirements, which are usually the ones agreed among the Member States. By contrast, the AILD made no such distinction, leaving the consequences of non-compliance largely to national discretion.⁵²⁴

In summary, the impact of the AILD's rules on evidence disclosure would have varied significantly across Member States. Still, as discussed below, even where national laws differ on how fault is established, the presumption of non-compliance under the AILD would have been sufficient to activate the presumption of a causal link between the fault and the damage.⁵²⁵

5.3.5 *An assessment of the mechanism of disclosure of evidence*

The disclosure mechanisms offer a valuable addition to the procedural tools available to both prospective and current claimants, but they also present certain limitations may hinder their effectiveness.

5.3.5.1 *A step toward effective AI accountability*

First, the disclosure process promoted effective enforcement, as potential claimants would have otherwise likely lacked access to the information necessary to make an informed and rational decision about whether to initiate legal action. This supports the argument for extending the rPLD's discovery mechanisms to pre-trial stages.⁵²⁶ Second, such enforcement mechanisms in turn enhanced incentives for compliance with the AI Act.⁵²⁷ Third, early-stage disclosure would have helped filter out unmeritorious claims, as individuals could have chosen not to litigate if they would have been unable to gather sufficient supporting evidence, thereby reducing the burden on courts and lowering overall social costs.⁵²⁸ Fourth, under the AILD, much of the information that could have been subject to disclosure already overlapped with the documentation, record-keeping, and transparency obligations imposed by the AI Act. Consequently, the additional administrative burden on providers of high-risk AI systems would have likely been minimal.⁵²⁹

5.3.5.2 *Key shortcomings*

On the other side, aligning the AILD Proposal's disclosure rules with the AI Act presented a notable drawback. The intended recipients of disclosures under the AI Act – typically developers, technical consultants, AI auditors, or regulatory authorities – are professionals with considerable expertise regarding AI. In contrast, disclosures in liability proceedings under the AILD and the rPLD would primarily be addressed to consumers or legal counsel, many of whom lack a deep technical background, and assessed by judges trained in law rather than

⁵²² S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 147.

⁵²³ J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 9.

⁵²⁴ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, Recital 14.

⁵²⁵ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 148.

⁵²⁶ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 18.

⁵²⁷ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, Recital 17.

⁵²⁸ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 18.

⁵²⁹ *Ibid.*

AI.⁵³⁰ While expert witnesses could help interpret complex technical evidence, their involvement is costly and may raise access barriers for claimants. To ensure that disclosure actually facilitates enforcement, the information provided must be intelligible to non-specialists, particularly to legal professionals without expertise in IT law. To achieve this objective, the AILD could have either aligned with the rPLD by mandating that evidence be disclosed in an accessible and comprehensible format⁵³¹, or alternatively, the AI Act's documentation obligations could have been supplemented with specific evidentiary standards tailored for litigation purposes. In the absence of such adjustments, there is a significant risk that the disclosure provisions will prove ineffective in practice.⁵³²

This highlights a further weakness in the AILD: the requirement for potential claimants to present facts and evidence supporting the plausibility of their claim before disclosure can be granted. While some form of threshold is necessary to protect developers from frivolous lawsuits or from misuse of the system to access trade secrets, this requirement may still prove overly burdensome. A parallel can be drawn with EU anti-discrimination law, where claimants must first establish a *prima facie* case before the burden shifts to the defendant.⁵³³ Yet, in practice, even assembling the evidence for such a threshold has proven difficult, limiting the effectiveness of private enforcement.⁵³⁴ To avoid a similar fate under AI liability rules, it should be enough for potential claimants to present evidence of damage and the involvement of an AI system to trigger disclosure. This would strike a fair balance between shielding companies from abusive claims and ensuring meaningful access to justice for harmed individuals. However, where the claimant is an actual or potential competitor, the current plausibility threshold should remain in place. In such cases, courts must also rigorously enforce protections for trade secrets to prevent misuse of the disclosure mechanism.⁵³⁵

Third, both the AILD and rPLD make the disclosure of evidence contingent on the condition that the requested information is at the disposal of the defendant. However, determining whether this condition is met can be difficult. While the AI Act specifies the types of information providers or users are expected to possess, it does not guarantee that such evidence is actually available or retained by the defendant. This challenge is further complicated by the fact that Article 9 rPLD also applies to non-high-risk AI systems, for which the AI Act does not impose specific obligations concerning logging, record-keeping, or documentation.⁵³⁶ To avoid ambiguity, both directives should have clarified that disclosure obligations applied not only when information was currently at a defendant's disposal, but also when it legally should have been, whether under the AI Act, contractual terms, or other statutory duties. This would ensure that a failure to retain or produce relevant records, in breach of applicable obligations, does not exempt the defendant from disclosure duties. For example, if a provider failed to document required metrics on accuracy or discriminatory impacts under Article 11 and Annex IV.2(g) of the AI Act, the court should be able to order the reconstruction or production of such data in the context of litigation, as suggested by Recital 42 of the rPLD.⁵³⁷

⁵³⁰ P. HACKER and J-H. PASSOTH, "Varieties of AI Explanations under the Law. From the GDPR to the AIA, and Beyond", in *Lecture Notes on Artificial Intelligence* (under the dir. of R. GOEBEL *et al*), Springer, 2022, p. 361.

⁵³¹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 9.6.

⁵³² P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 18.

⁵³³ Council Directive 2004/113/EC of 13 December 2004 implementing the principle of equal treatment between men and women in the access to and supply of goods and services, *O.J.E.U.*, L 373/37, 21st December 2004, art. 9.

⁵³⁴ MITTELSTADT, C. RUSSEL and S. WACHTER, "Why fairness cannot be automated: Bridging the gap between EU non-discrimination law and AI", *op. cit.*, p. 10.

⁵³⁵ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 18.

⁵³⁶ *Ibid.*

⁵³⁷ *Ibid.*

Fourth, to further reduce the burden on claimants, both directives should have explicitly allowed pre-trial disclosure applications to be filed in the same court where the main proceedings will take place, which is typically the court in the jurisdiction where the damage occurred. Requiring claimants, including consumers or collective redress organisations, to initiate such proceedings at the defendant's principal place of business could impose prohibitive legal costs, particularly in cross-border cases where foreign counsel may be required.⁵³⁸ Additionally, well-known concerns associated with pre-trial discovery and the potential misuse of the mechanism to extract trade secrets or exert pressure on financially weaker parties remain relevant.⁵³⁹ The US Federal Rules of Civil Procedure provide useful guidance in this respect, allowing courts to issue protective orders that shield parties from undue burden or risk. These include measures to prevent the disclosure of trade secrets altogether or to limit disclosure to specific, controlled circumstances.⁵⁴⁰ The EU should draw on this long-standing US experience by incorporating similar safeguards into the guidelines governing the balancing of interests in both the AILD and rPLD proposals. Doing so would help ensure that the benefits of pre-trial discovery are not undermined by strategic misuse or disproportionate demands.⁵⁴¹

Fifth, under the AILD, claimants would still have needed to interpret the relevant evidence at their disposal.⁵⁴² As Bertolini has observed – albeit in a slightly different context – one of the major challenges with logged data is that its interpretation and analysis can be, as mentioned before, overly complex and costly, particularly for weaker parties. Therefore, the AILD should have aligned with the rPLD and allowed courts to require evidence to be disclosed in an easily accessible and understandable manner, if deemed proportionate in terms of costs and effort for the required party.⁵⁴³

Sixth, the most significant shortcoming of the AILD Proposal's discovery mechanism conceivably lied in its restriction to high-risk AI systems as defined by the AI Act.⁵⁴⁴ The rationale behind this limitation was to avoid imposing disproportionate obligations on providers of non-high-risk AI systems by sparing them from having to generate or retain information they are not otherwise required to maintain under the AI Act.⁵⁴⁵ While this approach may appear reasonable from a proportionality standpoint, it ultimately undermined the utility of the AILD disclosure framework, particularly when viewed alongside the rPLD, which allows for evidence disclosure in relation to non-high-risk AI systems. Moreover, the effectiveness of this limitation is heavily dependent on the accurate classification of AI systems as high-risk. This is problematic, given that certain systems currently excluded from the high-risk category under the AI Act nonetheless pose serious risks to individuals, yet would have fallen outside the scope of the AILD disclosure mechanism. For instance, as the current draft of the AI Act stands, autonomous vehicles, general-purpose AI systems (GPAIs) and broader insurance applications beyond health and life insurance are not classified as high-risk systems, despite their potentially significant societal

⁵³⁸ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 18; Regulation (EU) No 1215/2012 of the European Parliament and of the Council of 12 December 2012 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters, *O.J.E.U.*, L 351/1, 20th of December 2012, art. 7(2).

⁵³⁹ S. SUBRIN, "Discovery in Global Perspective: Are We Nuts?", *DePaul Law Review*, 2012, Vol. 52, pp. 299 – 318.

⁵⁴⁰ Courts may require that a trade secret or other confidential research, development, or commercial information not be revealed or be revealed only in a specified way and may appoint masters to examine potential trade secrets subject to discovery, see Federal Rules of Civil Procedures, Rule 26(c)(1)(G) and Rule 53(a); P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 18.

⁵⁴¹ P. HACKER, *Ibid.*

⁵⁴² Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 3.1.

⁵⁴³ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 9.6.

⁵⁴⁴ *Ibid.*

⁵⁴⁵ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, Recital 18.

impact.⁵⁴⁶ As a result, affected individuals would have been left without meaningful recourse under the AILD in the event of harm caused by such systems. This misalignment stems from the AI Act's predominant focus on societal-level risks, often at the expense of adequately capturing disparities in individual risk exposure. For example, an AI system that causes significant harm to a small subset of individuals within a broader population might not satisfy the AI Act's threshold for classification as high-risk. However, from a liability standpoint, the severity of harm to those individuals highlights the need for a more nuanced approach to risk classification, that incorporates both collective and individual dimensions of risk. Accordingly, while the AI Act and the AILD pursued the shared objective of mitigating AI-related harm, their respective criteria for identifying high-risk systems could have justifiably diverged in order to address more effectively AI-related damages and ensure effective redress. Such a divergence would have enabled the AILD to establish a more nuanced and inclusive liability framework, capable of addressing a broader spectrum of AI applications that pose meaningful risks to individual rights and interests.⁵⁴⁷ To bridge this gap, the AILD could have either adopted a distinct definition of high-risk AI systems or explicitly extended the scope of Articles 3, 4.2, and 4.3 to encompass AI systems whose risk potential falls outside the AI Act's current high-risk classification.⁵⁴⁸ To accommodate these diverse use cases within a coherent conceptual framework, it would have been advisable to introduce a new "*high-impact AI systems*"⁵⁴⁹ category under the AILD. This new classification would have encompassed both the high-risk systems already identified in the AI Act and additional areas of concern that would have fallen outside that definition.⁵⁵⁰ The extension of the AILD seemed preferable, as it would have been essential to preserve a consistent definition of the term "*high-risk AI system*" between the AI Act and the AILD to ensure legal clarity and coherence.⁵⁵¹ In these cases, the potential risks to individuals would justify the additional burden that would have been placed on providers, even if those providers are currently exempt under the AI Act.⁵⁵²

5.4. The presumption of a causal link

Rules of causation are inherently national-specific, grounded in diverse legal doctrines and judicial traditions. The challenge is further compounded by the potential multiplicity of actors involved in the development and operation of AI systems and by the intrinsic opacity of such technologies, both of which can substantially impede a claimant's ability to demonstrate a causal connection between a defendant's fault and the resulting output.⁵⁵³ As a consequence, various mechanisms have been proposed to ease this evidentiary burden, ranging from the stringent – such as a complete reversal of the burden of proof – to more moderate solutions, like a rebuttable presumption of causality.⁵⁵⁴ Both the European Parliament Resolution⁵⁵⁵ and the Expert Group on Liability and New Technologies Report⁵⁵⁶ previously recommended, under specific conditions, a reversal of the burden of proof in relation to causation. However, as exemplified by Appendix 7, the AILD ultimately adopted a rebuttable

⁵⁴⁶ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 19; P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, 2024, pp. II; 15.

⁵⁴⁷ *Ibid.*

⁵⁴⁸ S. WACHTER, "Limitations and loopholes in the EU AI Act and AI Liability Directives: what this means for the European Union, the United States, and beyond", *Yale Journal of Law and Technology*, 2024, Vol. 26(3), p. 716.

⁵⁴⁹ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, 2024, p. 15.

⁵⁵⁰ *Ibid.*, p. 16.

⁵⁵¹ *Ibid.*

⁵⁵² P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 19.

⁵⁵³ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 13; M. BUITEN, A. DE STREEL and M. PEITZ, "The law and economics of AI liability", *op. cit.*, pp. 7 – 8.

⁵⁵⁴ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 148.

⁵⁵⁵ European Parliament resolution of 20 October 2020 with recommendations to the Commission on a civil liability regime for artificial intelligence (2020/2014(INL)), *O.J.E.U.*, C-404/107, 6th of October 2021.

⁵⁵⁶ EXPERT GROUP ON LIABILITY AND NEW TECHNOLOGIES – NEW TECHNOLOGIES FORMATION, "Liability for Artificial Intelligence", *op. cit.*

presumption as a more balanced and proportionate approach. Yet, since the AILD followed a minimum-harmonisation model, Member States would have remained free to uphold or introduce stricter standards for proving causation.⁵⁵⁷

5.4.1 *The conditions for presuming a causal link*

According to Article 4.1 of the AILD, national courts would have been required to presume the existence of a causal link between the defendant's fault and the output of an AI system if three cumulative conditions were met: the establishment of a fault, the proof of a reasonable likelihood, and the demonstration that the output caused damage.⁵⁵⁸

First, the AILD adopted a lower threshold for establishing fault specifically for the purpose of triggering the presumption of causation. In particular, if claimants could show that the defendant breached a duty of care under Union or national law intended to protect them against the type of damage suffered, that would have been sufficient to establish fault.⁵⁵⁹ Fault could be established either directly by the claimant, or indirectly via Article 3.5, which allowed fault to be presumed if the defendant failed to comply with a court order to disclose evidence. However, the AILD did not clearly address the relationship between the establishment of fault for the purpose of the causal presumption and the general requirement to prove fault as an independent element of liability.⁵⁶⁰ Since the lowered standard under Article 4.1(a) applied only to the presumption of a causal link, claimants would still have had to prove fault *per se* according to the applicable national legal standards. As a result, claimants may not have benefited from any meaningful reduction in the burden of proof in Member States where fault required a subjective element.⁵⁶¹

Second, to invoke the presumption of causality, claimants would have needed to demonstrate that it was "*reasonably likely*"⁵⁶² that the fault would have influenced the AI system's output, or its failure to produce one. As explained in Recital 25, this requirement was not met if the fault had no impact on the AI system's functioning and thus did not contribute to the damage. For example, non-compliance with AI Act obligations related to data governance, transparency, or human oversight might have been reasonably linked to harm. In contrast, a failure to register a high-risk AI system might not have qualified, as it would not have affected the system's performance. The interpretation of "*reasonable likelihood*"⁵⁶³ would ultimately have been shaped by CJEU jurisprudence, depending on the facts of individual cases.⁵⁶⁴

Third, the claimant would have needed to demonstrate that the output – or lack thereof – of the AI system caused the damage at issue.⁵⁶⁵ Since the AILD did not seek to harmonise the concept of damage, its scope would have remained subject to EU or national law. Consequently, the application of the Directive could have

⁵⁵⁷ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, Recital 14.

⁵⁵⁸ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 148.

⁵⁵⁹ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 4.1(a).

⁵⁶⁰ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 148.

⁵⁶¹ *Ibid.*

⁵⁶² *Ibid.*

⁵⁶³ *Ibid.*

⁵⁶⁴ *Ibid.*; L. GROZDANOVSKI, "The Explanation One Needs for the Explanations One Gives: The Necessity of Explainable AI (XAI) for Causal Explanations of AI-related harm – Deconstructing the Refuge of Ignorance in the EU's AI liability Regulation", *JUST-AI Jean Monnet Research Papers*, 2024.

⁵⁶⁵ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 4.1(c).

varied significantly across Member States, depending on how damage was defined and assessed in their domestic legal systems.⁵⁶⁶

Importantly, unlike the rules on evidence disclosure, the rebuttable presumption of a causal link extended to all AI systems, regardless of their risk classification, given that opacity can be a characteristic of any AI system. Nevertheless, the AILD introduced additional requirements and limitations on invoking this presumption, which varied depending on the systems' risk profile.⁵⁶⁷

5.4.2 *Claims against a provider or a deployer of a high-risk AI system*

Article 4.2 AILD indicated that the fault of a provider of a high-risk AI system could be established, for the purpose of triggering the presumption of a causal link, if the provider failed to comply with specific AI Act obligations related to: data governance⁵⁶⁸, transparency⁵⁶⁹, human oversight⁵⁷⁰, accuracy⁵⁷¹ and corrective actions⁵⁷². Likewise, under Article 4.3, the fault of a deployer of a high-risk AI system could also be presumed if they failed to monitor the system in accordance with its instructions for use, or if they did not ensure that the input data were relevant and representative, provided they had control over those data.⁵⁷³

Article 4 would have relieved claimants of the need to provide, and fund, expert witnesses to establish the precise causal link between a breach of the AI Act and the output of the system. Nonetheless, this reduction in cost and complexity would have had its limits as injured parties would still have needed to engage AI experts to establish a violation of the AI Act in the first instance.⁵⁷⁴

5.4.3 *Claims concerning non-high risk AI systems*

The second case concerned claims related to non-high-risk AI systems, regardless of the identity of the defendant. Consider, for example, a professional user who fails to monitor a generative AI system that automatically posts text on a social media platform. As seen in the case of the Microsoft chatbot that evolved into a racist speaker, such a language model may progressively generate derogatory content, eventually targeting specific groups of individuals.⁵⁷⁵

In such cases, the presumption of causality between the user's fault – like the failure to monitor the system – and the AI output is not tied to the breach of any specific obligation under the AI Act, particularly since non-high-risk systems are subject to relatively few requirements.⁵⁷⁶ Instead, the general clause in Article 4.1(a) would have applied, which required only a breach of a duty of care under Union or national law, provided that the duty was intended to protect against the kind of harm that materialised. However, this presumption would have been available only where the national court considered it excessively difficult for the claimant to prove their allegations.⁵⁷⁷ Thus, the purportedly lower risk profile of non-high-risk AI systems may have resulted in a higher evidentiary burden for claimants. This distinction would not have been justified in cases where such

⁵⁶⁶ S. LI and B. SCHÜTTE, "The Proposed EU Artificial Intelligence Liability Directive", *op. cit.*, p. 148.

⁵⁶⁷ *Ibid.*

⁵⁶⁸ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024, art. 10.

⁵⁶⁹ *Ibid.*, art. 13.

⁵⁷⁰ *Ibid.*, art. 14.

⁵⁷¹ *Ibid.*, art. 15 – 16(a).

⁵⁷² *Ibid.*, art. 16(g); art. 21.

⁵⁷³ *Ibid.*, art. 29; art. 29.3.

⁵⁷⁴ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 22.

⁵⁷⁵ *Ibid.*, p. 23.

⁵⁷⁶ *Ibid.*, Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024, art. 50.

⁵⁷⁷ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 4.6.

systems are just as opaque – and potentially harmful – as those classified as high-risk under the AI Act. This reinforced the argument that systems, such as autonomous vehicles, should either be reclassified as high-risk or, at a minimum, explicitly included within the scope of the presumption of causality under Article 4.2 and 4.3 AILD.⁵⁷⁸

5.4.4 *Claims against defendants using an AI system for personal purposes*

The final scenario involved claims brought against individuals who used an AI system for non-professional purposes.⁵⁷⁹ Even if the AI Act does not impose specific obligations on consumers,⁵⁸⁰ they may still be expected under national law to monitor or supervise AI systems they deploy, to the extent that they can control their behaviour and prevent harm.⁵⁸¹ In this context, Article 4.6 AILD envisaged a rebuttable presumption of causality between a consumer's fault and the AI output, but only under two specific conditions. First, the presumption would have applied where the consumer materially interfered with the operational conditions of the AI system. This might have involved placing an AI-powered lawnmower on a gravel path, causing it to kick up a stone that injures a pedestrian. Second, the presumption would also have applied if the consumer was both required and able to determine the AI system's operating conditions but failed to do so, such as using an autonomous vehicle outside permitted weather conditions.⁵⁸² While it might be argued that the same output would have occurred regardless of consumer intervention, this view overlooks the fact that the outcome would not have arisen at all had the consumer not exposed the system to inappropriate conditions. In other words, the causal sequence would never have been set in motion. According to Häcker, only the latter interpretation would have prevented the same practical limitations seen in cases involving user monitoring.⁵⁸³

5.4.5 *The limitations of the AILD proposal's presumption of causal link*

The causality presumption, alongside the more limited non-compliance presumption, represented a meaningful step in the right direction toward strengthening the private enforcement of the AI Act and facilitating compensation for individuals harmed by AI systems. These mechanisms aimed to address a crucial evidentiary gap that often prevents claimants from effectively pursuing fault-based claims. However, this objective was only partially realised and the causality presumption suffered from several structural and practical shortcomings.⁵⁸⁴

First, in the context of claims against the provider or deployer of a high-risk AI system, Article 4.4 AILD stipulated that the presumption of a causal link would not apply if the defendant could demonstrate that sufficient evidence and expertise were reasonably accessible to the claimant to prove causation. This raised the critical question of whether such "*reasonable access*" was deemed to include the financial and practical ability to hire AI experts as forensic witnesses. While this interpretation could not be entirely excluded, Recital 21 of the Proposal clearly indicated that the legislative intention was to minimize the financial burden on claimants and thereby facilitate private enforcement of the AI Act. This was further reinforced by Recital 27, which pointed to documentation

⁵⁷⁸ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 23.

⁵⁷⁹ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 4.6.

⁵⁸⁰ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024, art. 2 – 3.

⁵⁸¹ K. HORSEY and E. RACKLEY, *Tort Law*, Oxford University Press, 2019, pp. 64 – 73.

⁵⁸² P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 23; Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, Recital 29.

⁵⁸³ *Ibid.*

⁵⁸⁴ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 24.

and system logs as examples of accessible evidence, while remaining silent on costly external resources such as expert testimony.⁵⁸⁵

Second, the AILD did not propose a general reversal of the burden of proof regarding fault, except in the limited case addressed by Article 3.5. Consequently, victims were still expected to prove violations of the AI Act, which placed a significant evidentiary burden on claimants, particularly when attempting to assess compliance with technical requirements like the relevance, representativeness, or statistical integrity of training data.⁵⁸⁶ The inaccessibility of such information, both in terms of cost and complexity, revived the information paradox to the detriment of claimants as they can only assess the legal and technical relevance of internal information after incurring the cost of accessing and analysing it, typically by hiring experts. This paradox would have significantly undermined the effectiveness of any disclosure mechanism not accompanied by meaningful procedural support or cost-shifting measures.⁵⁸⁷

Third, the AILD failed to address liability for damage caused by the use of prohibited AI systems.⁵⁸⁸ A robust regime would ideally impose strict liability in such cases, requiring only a causal link between the prohibited system's use and the damage suffered. At a minimum, the law should provide for an irrefutable presumption of fault and causation. Even if prohibited systems were, in theory, flawlessly engineered, their deployment are unlawful by design. Accordingly, any harm resulting from their use should give rise to automatic compensation by both the developer who placed them on the market and the user who deployed them on the market.⁵⁸⁹

Fourth, while the AILD rightly refrained from introducing an evidence disclosure obligation or a rebuttable presumption in cases of non-compliance with Article 4 AI Act – given that such a provision would have been overly broad, potentially triggering the severe consequences of Articles 3 and 4 AILD due to the actions of any AI-illiterate staff member without a proven link to the damage –⁵⁹⁰ it nonetheless, did not fully capture the nuanced nature of AI functionality and accountability, especially in cases where post-output processes may mitigate initial non-compliance or where obligations arise after the AI system has generated its output. First, the presumption of causality should have been rebuttable in situations where initial breaches of the AI Act were effectively remedied during later stages of development or deployment, such as through post-processing techniques that correct biases in training data. Second, the presumption became particularly problematic in relation to violations of Article 14 of the AI Act, which requires human oversight mechanisms and emphasises the necessity of correcting outputs. Thus, a fault in the system's design – namely, the omission of oversight capabilities – does not directly cause a harmful output, but rather impedes the ability to intervene after the damage was caused. A similar issue arises under Article 26(2) and 26(5) AI Act, which imposes monitoring duties on deployers. The causal link between the absence of monitoring and the resulting output is tenuous, as monitoring occurs after the output is produced. These provisions reflect structural deficiencies in a system's capacity for post-deployment correction rather than direct influences on the output itself. Consequently, liability for such faults should be distinguished from traditional output-based causation.⁵⁹¹ To address this concern, Article 4 AILD should have incorporated a distinct presumption establishing a causal link not between the fault

⁵⁸⁵ *Ibid.*

⁵⁸⁶ S. NAWAZ, "The Proposed EU AI Liability Rules: Ease or Burden?", *European Law Blog*, 2022, available on <https://www.europeanlawblog.eu/pub/the-proposed-eu-ai-liability-rules-ease-or-burden/release/1>, accessed 7th of May 2025.

⁵⁸⁷ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 24.

⁵⁸⁸ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024, art. 5.

⁵⁸⁹ P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 24.

⁵⁹⁰ P. HÄCKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 17.

⁵⁹¹ *Ibid.*

and the output, but rather between the AI system's output and the resulting damage, in cases of non-compliance with Articles 14, 26(2) and 26(5) of the AI Act. This adjustment would have been justified by the structural nature of these obligations and the fact that a breach of Article 14 undermines the system's capacity for human oversight, eliminating the opportunity to intervene and rectify potentially harmful outputs before they take effect. Likewise, a failure to fulfil the monitoring duties set out in Article 26 severely limits the ability to detect and prevent harmful system behaviour in a timely manner. In such contexts, the damage results not from the characteristics of the output alone, but from the absence of mechanisms designed to prevent that output from causing harm. Accordingly, a rebuttable presumption linking the output of the AI system to the resulting damage – rather than to the underlying fault – would more accurately reflect the functional role of these provisions. This presumption could have been overturned if it were demonstrated that adequate oversight would not have identified or corrected the output, nor otherwise prevented the harm.⁵⁹²

Fifth, the relationship between the notions of fault and duty of care under the Article 4 was marked by significant ambiguity, raising interpretive concerns. Article 4.1 referred to the presumption of a causal link following a fault committed by a defendant through the violation of a duty of care under Union or national law, provided that the duty was intended to protect against the type of damage suffered. This definition encompassed a broad range of possible legal duties. By contrast, Article 4.2 and 4.3, which specifically addressed providers, affiliated persons, and users of high-risk AI systems, could be interpreted in two distinct ways.⁵⁹³ One interpretation treated the sole failure to comply with relevant AI Act requirements as sufficient to satisfy the requirement contained in Article 4.1(a), thereby triggering the presumption of causality. This reading implicitly construed the relevant AI Act obligations as obligations of result in private law. An alternative interpretation required both a violation of AI Act requirements and a breach of a duty of care, implying a two-step analysis: the identification of a duty of care grounded in the AI Act provisions, and the assessment on whether that duty had been breached. This more nuanced view appears to be supported by Article 4.2, which refers to "*the steps undertaken in and the results of the risk management system*"⁵⁹⁴ under the AI Act. It is also consistent with the inherently risk-based nature of the AI Act, which establishes a continuum of compliance rather than bright-line rules. Under this reading, AI Act requirements would more closely resemble obligations of means.⁵⁹⁵ Additionally, Article 4.2 was also considered problematic due to its use of the term "*only*". This may have implied that claimants could have exclusively benefited from the rebuttable presumption of causality in cases involving a violation of the specific AI Act requirements listed therein. As a result, the provision appeared to *a priori* exclude any other potentially relevant legal grounds for tort liability under EU or national law. This restrictive framing risked narrowing the scope of claimants' rights by limiting access to the presumption, even in cases where other breaches – perhaps equally or more relevant in a tort context – had occurred but were not explicitly tied to the listed AI Act obligations.⁵⁹⁶

Sixth, the AILD repeatedly invoked the concept of a duty of care, which, given the predominantly national character of tort law, was a surprising choice.⁵⁹⁷ A duty of care was defined in the Proposal as: "*a required*

⁵⁹² P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 17.

⁵⁹³ J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 7.

⁵⁹⁴ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 4.2.

⁵⁹⁵ J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 7.

⁵⁹⁶ J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 8.

⁵⁹⁷ *Ibid*; G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, pp. 46 – 49.

standard of conduct, set by national or Union law, in order to avoid damage to legal interests recognised at national or Union level, including life, physical integrity, property and the protection of fundamental rights.”⁵⁹⁸ It effectively referred to the expected conduct of a reasonable person in a given context and was framed as a means to ensure the safe operation of AI systems and prevent harm to recognised legal interests.⁵⁹⁹ Beyond the judicial discretion required to determine the content of such a duty in individual cases, the reliance on this concept raised deeper conceptual concerns. In particular, the idea of a generally applicable positive duty of care has long been contested in certain jurisdictions. For example, Belgian jurisprudence and legal scholarship typically reject the need for a breach of a pre-existing legal duty to establish fault in extracontractual liability.⁶⁰⁰ What is often called a duty of care in this context is better understood as a behavioural standard, a benchmark used to assess whether conduct was negligent, not a legal obligation in itself. By contrast, Article 4.1(a) of the AILD appeared to equate fault with non-compliance with a duty of care, thereby suggesting that the duty of care constitutes a standalone legal obligation. This approach implicitly endorsed a view that does not align with the Belgian tort law tradition, and possibly others as well, where fault is assessed more flexibly and without reference to such a formally defined duty. The result could have led to significant interpretive uncertainty and legal fragmentation across Member States.⁶⁰¹

Seventh, Article 1.3(d) AILD stated that the Directive would not affect: “*how fault is defined, other than in respect of what is provided for in Articles 3 and 4.*”⁶⁰² However, this caveat introduced ambiguity when read alongside national conceptions of fault, such as that under Belgian law, which includes both subjective and objective components. The subjective component requires imputability – that is, the fault must be attributable to the free will of the person who committed it – and culpability, meaning the individual must possess the capacity to assess and control the consequences of their conduct.⁶⁰³ This subjective dimension did not appear to be addressed in the Proposal, which raised the question of whether the notions of fault under Articles 3 and 4 were intended to require such a subjective element, or whether national law would remain free to impose this additional requirement. The minimum-harmonisation clause in Article 1.4 of the Proposal did not provide a clear answer.⁶⁰⁴ As for the objective component of fault, Belgian law traditionally recognises two types of wrongful behaviour: the violation of a specific legal rule⁶⁰⁵ and the breach of a standard of care.⁶⁰⁶ In the latter case, fault arises if the damage was reasonably foreseeable to the defendant at the time of their conduct.⁶⁰⁷ Applied to AI, a provider of a high-risk system would have committed a fault if it had been reasonably foreseeable that a breach of the relevant duties under the AI Act could have resulted in harm. However, the AILD’s reliance on the notion of duty of care created further uncertainty. It was unclear whether this concept, as used in the AILD, was meant to incorporate such foreseeability, or whether it would be left entirely to national courts to determine the relevant

⁵⁹⁸ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 2.9.

⁵⁹⁹ *Ibid.*, Recital 24.

⁶⁰⁰ J. DE BRUYNE, O. DHEU and C. DUCUING, “The European Commission’s approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive”, *op. cit.*, p. 9; M. KRUIHOF, *Tort Law in Belgium*, Kluwer Law International, 2018, p. 48.

⁶⁰¹ J. DE BRUYNE, O. DHEU and C. DUCUING, “The European Commission’s approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive”, *op. cit.*, p. 9.

⁶⁰² Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 1.3(d).

⁶⁰³ J. DE BRUYNE, O. DHEU and C. DUCUING, “The European Commission’s approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive”, *op. cit.*, p. 9; M. KRUIHOF, *Tort Law in Belgium*, *op. cit.*, pp. 53 – 56.

⁶⁰⁴ J. DE BRUYNE, O. DHEU and C. DUCUING, *Ibid.*

⁶⁰⁵ J. DE BRUYNE, O. DHEU and C. DUCUING, *Ibid.*; Cass, 3rd of October 1994, *Pas.*, 1994, p. 807.

⁶⁰⁶ J. DE BRUYNE, O. DHEU and C. DUCUING, *Ibid.*; M. KRUIHOF, *Inleidings tot het schadevergoedingsrecht*, Die Keure, pp. 90 – 92.

⁶⁰⁷ J. DE BRUYNE, O. DHEU and C. DUCUING, *Ibid.*; M. KRUIHOF, *Tort Law in Belgium*, *op. cit.*, p. 49.

thresholds and modalities.⁶⁰⁸

Eighth, even the concept of “causality” remained undefined in the text and is subject to divergent interpretations across Member States. For instance, in Belgium, the prevailing doctrine is the equivalence of conditions⁶⁰⁹, where judges assess only factual causation without layering on further normative tests.⁶¹⁰ According to this theory, courts must recognise a causal link between a fact and the resulting damage if it can be shown that the fact was necessary⁶¹¹ for the damage to occur under the specific circumstances. In other words, if the harm would not have arisen but for the presence of that fact, a causal relationship is established. Importantly, under Belgian law, a fact can be considered a cause even if an intervening event was also necessary, and even if the damage was not foreseeable or a normal consequence of the original fact.⁶¹² This approach contrasts with that of several other jurisdictions, where legal causation is subject to additional filters such as proximate cause or foreseeability. These divergences underscored a significant challenge: even with harmonised presumptions like those proposed in the AILD, claimants across the EU could still encounter substantial barriers in proving liability for AI-related harm, depending on how causation is interpreted under their national tort law systems.⁶¹³

Ninth, in light of the probabilistic behaviour of generative AI systems and the inherent unpredictability of their outputs – compounded by opacity regarding their development, safety, and security architectures – the AILD should have established a rebuttable presumption of causality for violations of Article 55 of the AI Act. This provision, which sets out safety obligations for GPAIs, should have triggered a presumption linking such violations to any concrete harmful output. Such a presumption would have meaningfully eased the burden on claimants seeking redress, given the practical difficulty of directly connecting specific design decisions to individual instances of harm. Crucially, this approach should not have precluded injured parties from establishing fault beyond a breach of Article 55 AI Act. Although this provision currently applies to a narrow subset of GPAI models with systemic risk – potentially limited to models such as GPT-4 and certain versions of Gemini, or Claude⁶¹⁴ – providers could still be held accountable based on other fault indicators including: inadequate content moderation during development and deployment, insufficient ongoing testing for harmful content, or the absence of effective notice-and-action mechanisms enabling users to flag problematic outputs.⁶¹⁵

⁶⁰⁸ J. DE BRUYNE, O. DHEU and C. DUCUING, *Ibid.*

⁶⁰⁹ T. VANSWEEVELT and B. WEYTS, *Handboek Buitencontractueel Aansprakelijkheid*, Intersentia, 2009, pp. 147 – 148.

⁶¹⁰ H. BOKEN, I. BOONE and M. KRUIHOF, *Inleiding tot het schadevergoeding*, Die Keure, 2014, pp. 64 – 65; C. civ., art. 6.18.

⁶¹¹ Or a *conditio sine qua non*, see J. DE BRUYNE, O. DHEU and C. DUCUING, “The European Commission’s approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive”, *op. cit.*, p. 9.

⁶¹² M. KRUIHOF, *Tort Law in Belgium*, *op. cit.*, p. 126.

⁶¹³ J. DE BRUYNE, O. DHEU and C. DUCUING, “The European Commission’s approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive”, *op. cit.*, p. 9.

⁶¹⁴ P. HACKER, “Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment”, *op. cit.*, p. 19.

⁶¹⁵ *Ibid.*; THE FUTURE OF SOCIETY, *Generative AI in EU Law: Liability, Privacy, Intellectual Property and Cybersecurity*, December 2023, available on <https://thefuturesociety.org/wp-content/uploads/2023/12/EU-AI-Act-Compliance-Analysis.pdf>, accessed 14th of May 2025.

5.5. Trustworthy AI

Effective compensation and innovation cannot be the sole objectives of AI liability. Trustworthy AI has become central in AI ethics and is a foundational element of the EU's regulatory approach to AI. While the EU Commission's interpretation of trustworthy AI has faced criticism⁶¹⁶, the AI liability package explicitly supports: *"the objective (...) to promote the rollout of trustworthy AI to maximize its full benefits for the internal market."*⁶¹⁷ Key trustworthiness aspects in AI, such as mitigating unpredictable behavior, reducing opacity, and addressing discrimination within AI systems, remain crucial not only from an ethical standpoint but also from a regulatory perspective.⁶¹⁸ Achieving these goals requires a comprehensive approach to the primary risks of AI. However, as the next section highlights, several of these critical dimensions are inadequately addressed in the new liability framework and require immediate attention.⁶¹⁹

5.5.1 Autonomy and foreseeability

A key element of trustworthy AI is predictability.⁶²⁰ This characteristic is challenged by the unpredictability of certain AI outputs, which arises from the autonomy of AI models. The EU liability framework aims to address the effects of unpredictability by lowering compensation barriers through mechanisms such as a presumption of fault and causality. More significantly, the AI Act seeks to reduce the likelihood of unforeseeable damage by imposing various constraints on the development and deployment of high-risk AI.⁶²¹ For instance, the data governance framework outlined in Article 10 of the AI Act ensures that training, validation, and testing data are sufficiently diverse and representative of the target population. By adhering to this framework, providers can improve the chances that their models will generalize effectively to unseen real-world cases.⁶²² Similarly, the output requirements in Article 15 of the AI Act are designed to minimize error rates and prevent harmful feedback loops in online learning scenarios.⁶²³ These conditions are vital for the deployment of any AI system, not solely high-risk applications. However, a specific challenge related to unpredictability lies in the lack of harmonization in the concept of causality across the European liability framework.⁶²⁴ Some national tort systems adopt a normatively enriched understanding of causality, where injurers are exempt from compensating damages that were objectively unforeseeable at the time of the act or omission.⁶²⁵ In contrast, with AI, unforeseeable outputs and the damages they cause are, in theory, foreseeable. Indeed, despite the ability of AI systems to produce unpredictable or unexpected results, they operate within a framework that allows for the anticipation of certain risks. Even if some outputs may appear unpredictable or unforeseeable in practice, the underlying behavior of AI systems – such as their reliance on data, algorithms, and training models – can still be analyzed, understood, and anticipated to some degree. In other words, while an individual instance of AI behavior might be unpredictable, the general nature of AI systems' capabilities and limitations can be foreseen based on their design, operation, and context.⁶²⁶ Therefore, the EU liability framework should clarify that

⁶¹⁶ J. LAUX, S. WACHTER and B. MITTELSTADT, "Trustworthy artificial intelligence and the European Union AI act: On the conflation of trustworthiness and acceptability of risk", *Regulation & Governance*, Vol. 18, 2023, pp. 3-32.

⁶¹⁷ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, p. 2.

⁶¹⁸ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 34; M. TADDEO, "Modelling Trust in Artificial Agents, A First Step Toward the Analysis of e-Trust", *Minds and Machines*, Vol. 20, 2010.

⁶¹⁹ *Ibid.*

⁶²⁰ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 34; N. L. CHERVANY and D. HARRISON MCKNIGHT, "The Meaning of Trust", 1996, p. 34.

⁶²¹ *Ibid.*

⁶²² A. LINDHOLM *et al.*, *Machine learning – A First Course for Engineers and Scientists*, *op. cit.*, 2022, p. 296.

⁶²³ E. BISONG, *Building Machine Learning and Deep Learning Models on Google Cloud Platforms*, *op. cit.*, p. 199.

⁶²⁴ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 34.

⁶²⁵ A. SELBST, "Negligence and AI's Human Users", *Public law Research Paper N° 20-01*, 2020.

⁶²⁶ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 34; M. DENG, "Deliktische Haftung für künstliche Intelligenz", *Computer und Recht*, Vol. 34, 2018, p. 72.

damages eligible for compensation include harm resulting from unforeseeable actions or omissions of an AI system.⁶²⁷

5.5.2 Complexity and opacity

A second essential aspect of trustworthiness emphasized in AI ethics is explainability⁶²⁸, which refers to the extent to which an observer can understand the underlying causes of an AI system's output.⁶²⁹ The explanation of an AI outcome can be obscured by two distinct and independent forms of opacity: institutional and technical opacity. Institutional opacity pertains to the deliberate withholding of information by AI developers or users, while technical opacity arises from the inherent difficulty in identifying the causes of a model's output due to its technical complexity.⁶³⁰

The disclosure of evidence framework within the AILD and rPLD seeks to directly address institutional opacity, whereas the burden of proof regime indirectly tackles this issue by imposing responsibility on operators, including developers, if they fail to provide necessary information.⁶³¹ However, they are less explicit when it comes to addressing the challenge of technical opacity. From a technical standpoint, many models are at least explainable to some degree, allowing for the identification of the most relevant features for a particular decision (local explanation) or for the entire model (global explanation).⁶³² For instance, linear regression or simple decision trees are interpretable *ex ante*, as they easily provide weights for individual features in the model.⁶³³ In contrast, more complex models, such as deep neural networks, ensemble models, or support vector machines, only allow for *post-hoc* explanations that approximate feature relevance for individual decisions.⁶³⁴ Global explanations are even more challenging to achieve, and the accuracy of these explanations remains a subject of ongoing debate.⁶³⁵ Recently, EU law has incorporated several provisions requiring explanations, specifically in terms of feature relevance, for AI models. The AI Act, though, introduces a more modest transparency regime in Article 13, alongside an obligation to provide feature relevance as part of the technical documentation outlined in Article 11(1) and Annex IV(2)(b).⁶³⁶

The AILD and the rPLD address technical opacity implicitly through the disclosure and presumption regimes, by requiring defendants to provide evidence that is "*at their disposal*".⁶³⁷ This raises the question: what happens if the information is not available to the defendant because a black-box AI system is used? For instance, it is currently nearly impossible to obtain feature relevance scores for the entire model when using support vector

⁶²⁷ *Ibid.*

⁶²⁸ W. PIETERS, "Explanation and trust: what to tell the user in security and AI?", *Ethics and Information Technology*, Vol. 13, 2010, pp. 53 – 64.

⁶²⁹ Z. LIPTON, "The Mythos of Model Interpretability: In machine learning, the concept of interpretability is both important and slippery", *Association for Computing Machinery*, Vol. 16, 2018, p. 16.

⁶³⁰ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 34.

⁶³¹ *Ibid.*

⁶³² *Ibid.*; Z. LIPTON, "The Mythos of Model Interpretability: In machine learning, the concept of interpretability is both important and slippery", *op. cit.*

⁶³³ C. RUDIN, "Stop explaining black box machine learning models for high stakes decisions and use interpretable models instead", *Nature Machine Intelligence*, Vol. 1, 2019, pp. 206 – 215.

⁶³⁴ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 35; C. GUESTIN, M.T. RIBERIO and S. SINGH, "Why Should I Trust You?: Explaining Predictions of Any Classifier", 2016, pp. 1135 – 1134.

⁶³⁵ P. BOMMER *et al.*, "The Meta-Evaluation Problem in Explainable AI: Identifying Reliable Estimators with MetaQuantus", *Transactions on Machine Learning Research*, Vol. 2023, 2023.

⁶³⁶ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 35.

⁶³⁷ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 3; Regulation (EU) 2022/1925 of the European Parliament and of the Council of 14 September 2022 on contestable and fair markets in the digital sector and amending Directives (EU) 2019/1937 and (EU) 2020/1828, *O.J.E.U.*, L 265/1, 12th October 2022, art. 9.

machines – a type of machine learning model – or deep neural networks. Such information, however, could be crucial for determining whether a decision, such as in credit scoring, was influenced by bias.⁶³⁸

At first sight, defendants may not be required to disclose this information since it is not within their possession and can be impossible to obtain. Still, the use of a black-box model should not result in an increased burden on the injured party.⁶³⁹ Instead, defendants should bear the consequences of choosing an opaque model. This interpretation aligns with the purpose of the disclosure requirements, which aim to ease, not exacerbate, the difficulties of proof for victims. Therefore, it is crucial that disclosure is still required if: *"(...) the evidence should be, but due to the black-box character of the model is not, at the defendant's disposal."*⁶⁴⁰

⁶³⁸ A. BARREDO *et al.*, "Explainable Artificial Intelligence (XAI): Concepts, Taxonomies, Opportunities and Challenges toward Responsible AI", 2019, p. 90; P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 35.

⁶³⁹ *Ibid.*

⁶⁴⁰ *Ibid.*

6. The interplay between the revised PLD and the AILD proposal

Perhaps the most critical aspect regarding the relationship between the revised rPLD and the AILD concerned their respective scopes of application, areas of overlap, and distinct added value. At first glance, the AILD might have appeared redundant, given that the revised PLD already incorporated procedural tools such as evidence disclosure and rebuttable presumptions. However, such a conclusion would have been inaccurate since, as illustrated by Appendix 8, the scope of both the rPLD and the AILD were not unidimensional but multifaceted. With respect to the material scope – particularly the inclusion of software and AI – the rPLD ensures that no liability gap remains. Likewise, in terms of personal scope, the key actors in the AI value chain are already covered by the rPLD.⁶⁴¹

However, two areas remain insufficiently addressed by the rPLD and would have necessitated the complementary enactment of the AILD to bridge these gaps. First, regarding its personal scope of application, the rPLD is explicitly tailored to professional actors and economic operators, leaving a regulatory gap concerning non-professional users. In contrast, the AILD extended its coverage to both professional and non-professional users of AI systems. This broader scope would have been essential to ensure comprehensive liability coverage, including for individual consumers who interact with AI technologies – such as users of generative AI tools. Moreover, the AILD would have applied to professional users whose property is damaged, a category currently excluded under the rPLD. Second, the rPLD's narrow definition of compensable harm leaves significant gaps in protection. The AILD sought to fill these by encompassing a broader range of damages, including: discrimination, violations of personality and fundamental rights, professionally used property, pure economic loss, and sustainability.

6.1. Pure economic losses

Whether the rPLD should encompass pure economic loss and damage to professionally used property remains a contested issue.⁶⁴² Ultimately, however, the rPLD does not cover these categories. This is especially problematic in the context of AI, where pure economic loss is highly relevant, particularly in high-risk sectors – such as credit scoring and, health and life insurance – that are specifically covered under the AI Act.⁶⁴³ Likewise, damage to professionally used property is highly significant in industrial and broader B2B AI applications. Where national tort law does provide for compensation in these categories, the same procedural safeguards available under the rPLD – such as evidentiary disclosure and causality presumptions – should apply. According to Häcker, there is no compelling justification for offering a lower level of protection to professional users or to non-physical losses, particularly since these interests often relate to fundamental rights. Moreover, professional users of AI products generally face the same informational asymmetries as consumers because they also lack access to the inner workings, data sets, and algorithms of AI providers. Therefore, Articles 3 and 4 of the AILD were essential to supplement the rPLD in these cases.⁶⁴⁴

Importantly, this implies that the full range of IP rights should have fallen within the scope of the AILD. These rights are typically used in professional contexts and thus lie outside the rPLD's scope. However, under the

⁶⁴¹ P. HÄCKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 19.

⁶⁴² G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, pp. 53 – 56.

⁶⁴³ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024, *Annex III.*, § 5.

⁶⁴⁴ P. HÄCKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 23.

AILD, rights-holders could have benefitted from a reversed or alleviated burden of proof, as such infringements could be interpreted as violations of the standard of care owed under applicable liability frameworks.⁶⁴⁵

6.2. Discrimination

Within rPLD, discriminatory outputs generated by AI systems are not explicitly excluded from being considered as product defects. However, the rPLD proposal does not directly reference EU non-discrimination directives, indicating a reluctance to incorporate non-discrimination norms into the concept of defectiveness.⁶⁴⁶ This interpretation is supported by both the European Commission⁶⁴⁷ and certain scholars⁶⁴⁸, who suggest that issues of discrimination fall outside the intended scope of PLD-based claims. Nevertheless, given the heightened public sensitivity and legitimate user expectations regarding fairness and non-discrimination in AI, there is a strong argument for considering such outcomes on a case-by-case basis under the AI liability regime, to avoid regulatory gaps in critical areas of enforcement.⁶⁴⁹

The AILD proposal's causality presumption, as set out in Article 4.2, referenced Article 10 on data governance and Article 15 on feedback loops of the AI Act, which both cover non-discrimination cases. Yet the precise applicability of the AILD to cases of discriminatory harm remained ambiguous and required further clarification. A key point of contention lied in the AILD's distinction between strict and fault-based regimes and the fact that the CJEU has consistently treated discrimination as a matter of strict liability, which did not align seamlessly with the AILD's fault-based approach under Article 4.⁶⁵⁰

Although the European Commission⁶⁵¹ and some commentators⁶⁵² classify discrimination as a fault-based issue, this is not necessarily appropriate in all cases. If a provider uses biased training data in breach of Article 10 of the AI Act, liability could be established based on a violation of the duty of care. However, there will be scenarios – especially involving generative AI systems – where harmful or discriminatory outcomes will occur despite compliance with all applicable safety, moderation, and technical standards. In such cases, identifying a specific fault may prove impossible. Nonetheless, under a strict liability framework for discrimination, responsibility could still be attributed – potentially on a joint basis to both the provider and deployer.⁶⁵³ Importantly, the wording of Article 3 AILD, which did not explicitly require fault, could have offered a pathway for such claims. Nevertheless, as it applied only to high-risk AI systems under the AI Act, it did not extend to generative AI; a limitation that should have been addressed.

It should have been explicitly clarified that the AILD applied to cases involving liability for discrimination. The necessity of incorporating evidence disclosure mechanisms and a rebuttable presumption of causality in such cases is underscored by persistent enforcement challenges and the restrictive approach taken by the CJEU.⁶⁵⁴

⁶⁴⁵ *Ibid*; A. MARINKOVIC, "Liability for AI-related IP infringements in the European Union", *Journal of Intellectual Property Law & Practice*, 2024, Vol. 19, pp. 5 – 6.

⁶⁴⁶ *Ibid.*, p. 21.

⁶⁴⁷ EUROPEAN COMMISSION, "Questions and answers on the revision of the Product Liability Directive", 28th of September 2022, point 5, available on https://ec.europa.eu/commission/presscorner/detail/en/qanda_22_5791, accessed 12th of May 2025.

⁶⁴⁸ G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, p. 56.

⁶⁴⁹ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, 2024, p. 21; P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 37.

⁶⁵⁰ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*

⁶⁵¹ EUROPEAN COMMISSION, "Questions and answers on the revision of the Product Liability Directive", 28th of September 2022, available on https://ec.europa.eu/commission/presscorner/detail/en/qanda_22_5791, accessed 12th of May 2025.

⁶⁵² P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 21; G. SPINDLER, "Die Vorschläge der EU-Kommission zu einer neuen Produkthaftung und zur Haftung von Herstellern und Betreibern Künstlicher Intelligenz", *Computer und Recht*, 2022, Vol. 38(11), p. 704.

⁶⁵³ P. HACKER, *Ibid.*

⁶⁵⁴ Judgment of the Court of 19 April 2012, *Galina Meister v Speech Design Carrier Systems GmbH*, C-415/10, EU:C:2012:217, § 46 – 47.

These barriers reinforced the need for the AILD to clearly encompass discrimination claims within its scope. By doing so and to the extent that an element of fault can be identified – and may be required under certain national transpositions despite the CJEU's tendency to treat discrimination as a matter of strict liability – the causality presumption introduced by Article 4 AILD would have offered meaningful support to claimants.⁶⁵⁵

6.3. Personality rights

Whether the EU's product liability framework extends to information has been debated.⁶⁵⁶ This issue gained particular relevance in light of the *Krone* case, which distinguished informational content found in a printed newspaper from a product within the meaning of the rPLD.⁶⁵⁷ However, whether this distinction applies to generative AI output remains questionable. Unlike a newspaper article, the output generated by AI is intrinsically linked to the functioning and structure of the AI model itself, arguably rendering it part of the product.⁶⁵⁸ Nonetheless, the rPLD does not extend to compensating violations of personality rights⁶⁵⁹ or other fundamental rights – such as privacy, data protection, human dignity, or family-related rights – many of which fall under the domain of Member State tort law. This reveals a significant gap in the EU's liability regime.⁶⁶⁰

While Article 82 of the GDPR offers a potential avenue for redress where personality rights are violated through unlawful processing of personal data,⁶⁶¹ there is a lack of jurisprudence in this specific context. Furthermore, no comprehensive EU-level mechanism exists to provide compensation for infringements of other fundamental rights. This gap underlined the importance of extending the scope of the AILD to cover such violations. In particular, the AILD should have provided mechanisms for evidence disclosure and introduced a rebuttable presumption of causality in these cases. Failures such as the absence of robust content moderation policies during model training or deployment, insufficient ongoing testing, or a lack of notice-and-action procedures could have supported a finding of fault in personality rights violations.⁶⁶²

6.4. Sustainability

Finally, climate harms and sustainability risks arising from the large-scale deployment of advanced AI models⁶⁶³ – such as excessive energy and water consumption during training and inference, and the use of hazardous materials – are not adequately addressed in either the AI Act or the rPLD.⁶⁶⁴ Although Member States could introduce new legal mechanisms to link environmental damage to liability, or adapt existing frameworks to address AI-induced ecological harms, such measures are not guaranteed.⁶⁶⁵ Such claims should have

⁶⁵⁵ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 22.

⁶⁵⁶ *Ibid.*; G. HOWELLS, C. TWIGG-FLESNER and C. WILLET, "Product liability and digital products", in *EU Internet Law* (under the dir. of T-E. SYNODINOU), Springer, 2017, p. 183; G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, p. 12.

⁶⁵⁷ Judgment of the Court of 10 June 2021, *VI v. Krone*, C-65/20, EU:C:2021:471.

⁶⁵⁸ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 22.

⁶⁵⁹ G. WAGNER, "Liability Rules for the Digital Age – Aiming for the Brussels Effect", *op. cit.*, pp. 51 – 53.

⁶⁶⁰ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 23.

⁶⁶¹ *Ibid.*

⁶⁶² *Ibid.*

⁶⁶³ *Ibid.*; G. BLAIR *et al.*, "Our house is on fire: The climate emergency and computing's responsibility", *Communication on the ACM*, 2022, Vol. 665; A. LUCCIONI, Y. JERNITE and E. STRUBELL, "Power Hungry Processing: Watts Driving the Cost of AI Deployment?", *ACM Conference on Fairness, Accountability, and Transparency*, 2024; A. DE VRIES, "The growing energy footprint of artificial intelligence", *JOULE*, 2023.

⁶⁶⁴ P. HACKER, "Sustainable AI Regulation", *C.M.L.R.*, 2024, Vol. 61.

⁶⁶⁵ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 24; M. DOELLE and S. SECK, "Loss & damage from climate change: from concept to remedy?", in *The Third Pillar of International Climate Change Policy*, (under the dir. of M. BROBERG and B. ROMERA), Routledge, 2021, p. 59.

benefitted from the procedural alleviations introduced by the AILD. This further justifies the need for a distinct and complementary AILD framework, extending beyond the scope of the rPLD.⁶⁶⁶

6.5. Towards a software liability regulation?

The adoption of the revised PLD represents a significant advancement in EU liability law, particularly in adapting to the challenges posed by emerging technologies. Nonetheless, as discussed, the rPLD retains several critical gaps. These shortcomings underscored the importance of the AILD, which complemented the rPLD by introducing procedural mechanisms that were vital in navigating the inherent opacity of AI systems. However, by limiting its scope to AI systems, the AILD did not fully respond to the broader complexities introduced by digital technologies. Similar evidentiary challenges exist in relation to many forms of non-AI software, especially where opacity, autonomous functionality, or system complexity are involved. The rPLD's recognition that all software can fall within its scope suggests the necessity of a more harmonised legal approach. Accordingly, the expansion of the AILD into a more comprehensive Software Liability Instrument has been proposed.⁶⁶⁷ Such an instrument would extend the procedural protections of the AILD to all software, not solely AI. Under this broader framework, the evidence disclosure regime should apply universally, while rebuttable presumptions for non-AI software should align with the standards set for non-high-risk AI systems. This would ensure consistency across digital liability regimes and provide more effective legal redress in the face of technological complexity.

Furthermore, the decision to adopt two separate directives has drawn criticism, particularly in light of past experiences with the Data Protection Directive, where the divergences in national transpositions created a fragmented legal landscape, complicating the enforcement of rights and protections, especially for consumers seeking redress across jurisdictions. Similar risks of legal uncertainty and inconsistency now loom over the dual-directive approach to AI liability. Therefore, the enactment of an AI liability regulation rather than a directive has been proposed to address these concerns and provide a uniform and directly applicable legal framework across all Member States, thereby benefiting both the AI industry and citizens by ensuring legal certainty and consistent standards. This approach aligns with a broader legislative trend within the EU, where some areas of EU internal market law have increasingly shifted from directives to regulations to prevent fragmentation.⁶⁶⁸ Most recently, the adoption of the General Product Safety Regulation reaffirmed this regulatory shift, with the Commission noting in its impact assessment that the directive format had led to problems linked predominantly to the implementation and national differences regarding the date and/or manner of transposition.⁶⁶⁹ The same rationale applies to AI liability. Given the close regulatory proximity between product safety and product liability, the choice of a directive for the AILD appears increasingly misaligned with the EU's broader legal strategy. The legislative impact assessments for both the rPLD and AILD should have considered this regulatory alternative more seriously.⁶⁷⁰

⁶⁶⁶ P. HACKER, *Ibid.*

⁶⁶⁷ *Ibid.*, pp. 38 – 39.

⁶⁶⁸ See for example, Regulation (EU) No 596/2014 of the European Parliament and of the Council of 16 April 2014 on market abuse (market abuse regulation) and repealing Directive 2003/6/EC of the European Parliament and of the Council and Commission Directives 2003/124/EC, 2003/125/EC and 2004/72/EC, *O.J.E.U.*, L 173/ 1-, 12th of June 2014; Regulation (EU) 2017/745 of the European Parliament and of the Council of 5 April 2017 on medical devices, *O.J.E.U.* L 117/1, 5th of May 2017.

⁶⁶⁹ EUROPEAN COMMISSION, "Commission Staff Working Document – Impact assessment accompanying the document Proposal for a Regulation of the European Parliament and of the Council on general product safety, amending Regulation (EU) No 1025/2012 of the European Parliament and of the Council, and repealing Council Directive 87/357/EEC and Directive 2001/95/EC of the European Parliament and of the Council", SWD(2021) 168, final, p. 21.

⁶⁷⁰ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, p. 39.

Given the pivotal role of AI in driving innovation and shaping the Digital Single Market, a uniform legal approach seems crucial. A regulation would more effectively support the EU's ambition to construct a coherent, adaptable legal framework for the digital era – capable of keeping pace with the cross-border and highly complex nature of AI technologies. Departing from the traditional reliance on Member States' competence in non-contractual liability acknowledges the structural integration of the Digital Single Market and the transnational nature of AI technologies. In this context, leveraging Article 114 TFEU to establish a comprehensive, EU-wide regulation – rather than directives – on AI and software liability would offer a coherent and directly applicable legal framework. This would align with broader EU regulatory trends and address the shortcomings associated with the directive-based approach.

7. The future of AI liability in the European Union

7.1. The impact of the Draghi report on the EU's regulatory agenda

The Draghi report identifies regulation as a central constraint on the European Union's innovation potential, emphasising the limited commercialisation of innovation and the persistent barriers that hinder the scaling-up of innovative firms. Regulatory inconsistency and fragmentation across Member States are presented as key impediments, contributing to high compliance costs and limiting access to the full potential of the Single Market. These concerns have led some commentators to interpret the report – and the European Commission's subsequent response – as indicative of a shift towards deregulation⁶⁷¹, which may be premature. Rather, the shift prompted by the Draghi report reflects a more nuanced and deliberate approach calling for a comprehensive regulatory transformation.⁶⁷²

While the report underscores the burden of overlapping and inconsistent regulatory frameworks⁶⁷³, it also points to the structural role regulation must play in addressing fragmentation and enabling innovation. This dual function of regulation is a recurring theme: on the one hand, reducing administrative and compliance burdens; on the other, advancing harmonisation efforts to eliminate legal divergence within the Single Market. The report's recommendations coalesce around four core objectives: (i) simplifying the EU acquis and introducing a systematic filter for new legislative proposals; (ii) strengthening the enforcement of Single Market legislation; (iii) ensuring that regulatory measures remain proportionate, particularly for SMEs and mid-cap innovators; and (iv) creating regulatory conditions conducive to innovation. In particular, the report highlights the disproportionate burden that regulatory frameworks impose on smaller firms, noting the lack of guidance, the complexity of rules, and frequent legislative revisions as significant obstacles to innovation. To operationalise its proposals, the Draghi report advances three guiding principles. First, it calls for a more deliberate balancing of the precautionary⁶⁷⁴ and innovation principles⁶⁷⁵, particularly in determining the appropriate level of harmonisation. Second, it stresses the importance of choosing suitable legislative instruments based on considerations of compliance, enforcement, and administrative cost. Third, it advocates for a more rigorous and transparent management of the acquis, including the withdrawal of obsolete provisions, the avoidance of legal overlap, and enhanced mechanisms for implementation and enforcement across Member States. The report makes several proposals for achieving the simplification framework's objectives and mainly focuses on equipping the Commission and the national authorities with better data analysis tools, improving cost-calculating methodologies and enforcement action, with the ultimate aim of reducing compliance burden stemming from EU regulations across all sectors of economic activity.⁶⁷⁶

⁶⁷¹ T. MOLLER-NIELSEN, "Who's afraid of deregulation?", *Euractiv*, 7th of February 2025, available on <https://www.euractiv.com/section/economy-jobs/news/whos-afraid-of-deregulation/>, accessed 16th of May 2025.

⁶⁷² N. DIVISSENKO, "From Draghi report to the European Commission's regulatory agenda: regulatory transformation or deregulation?", *European Law Blog*, 26 of May 2025, available on [https://www.europeanlawblog.eu/pub/88zaty7d/release/1#:~:text=The%20Draghi%20report%20is%20explicit%20in%20identifying,EU%20due%20to%20inconsistent%20and%20restrictive%20regulations'.&text=While%20reducing%20the%20burden%20suggests%20less%20regulation%2C,and%20foster%20the%20Single%20Market%20for%20innovation.](https://www.europeanlawblog.eu/pub/88zaty7d/release/1#:~:text=The%20Draghi%20report%20is%20explicit%20in%20identifying,EU%20due%20to%20inconsistent%20and%20restrictive%20regulations'.&text=While%20reducing%20the%20burden%20suggests%20less%20regulation%2C,and%20foster%20the%20Single%20Market%20for%20innovation.,), accessed 16th of May 2025.

⁶⁷³ See for example, Directive (EU) 2024/1760 of the European Parliament and of the Council of 13 June 2024 on corporate sustainability due diligence and amending Directive (EU) 2019/1937 and Regulation (EU) 2023/2859, *O.J.E.U.*, 5th of July 2024; Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, *O.J.E.U.*, L.119/1, 4th of May 2016.

⁶⁷⁴ PUBLICATION OFFICE OF THE EUROPEAN UNION, "Precautionary principle", *EUR-Lex*, available on https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:precautionary_principle#:~:text=The%20precautionary%20principle%20is%20an,should%20not%20be%20carried%20out, accessed 16th of May 2025.

⁶⁷⁵ EUROPEAN COMMISSION, "The Innovation Principle", available on https://research-and-innovation.ec.europa.eu/system/files/2022-07/ec_rtd_factsheet-innovation-principle.pdf, accessed 16th of May 2025.

⁶⁷⁶ N. DIVISSENKO, "From Draghi report to the European Commission's regulatory agenda: regulatory transformation or deregulation?", *op. cit.*

The European Commission's response aligns with these recommendations. The simplification effort – framed as one of the five horizontal enablers of competitiveness within the Competitiveness Compass⁶⁷⁷ – is aimed at enhancing the regulatory environment without undermining core policy objectives. Significantly, this simplification agenda is situated within a broader policy framework which includes renewed efforts to deepen the Single Market, increase access to private and public financing, improve labour mobility, and enhance coordination among Member States.⁶⁷⁸ These efforts underline the dual nature of the Commission's task: the alleviation of regulatory burdens and, at the same time, the introduction of new instruments where necessary to reduce fragmentation. In this context, the Commission's approach should rather be interpreted as one of regulatory transformation rather than deregulation. The challenge is not simply whether to regulate, but how to design and implement regulation that facilitates innovation and competitiveness while safeguarding public interests and the integrity of the Single Market. Digitalisation of regulatory processes, enhanced methodologies for calculating compliance costs, and the systematic evaluation of new legislative proposals are all part of a forward-looking regulatory agenda.⁶⁷⁹

Ultimately, regulatory transformation rests on three interrelated dimensions: (i) the simplification and improved enforcement of existing legislation; (ii) the consistent filtering of new regulatory initiatives through the lens of innovation and competitiveness; and (iii) the deployment of innovative, flexible regulatory instruments that support technological development while maintaining a high level of protection for consumers and the environment. In this light, the Draghi report should not be viewed as a firm stance against regulation, but as a strategic recalibration aimed at fostering a more dynamic, coherent, and innovation-friendly regulatory environment across the EU.⁶⁸⁰

7.2. The potential withdrawal of the AILD proposal

Following the publication of the Competitiveness Package, the European Commission advanced its regulatory simplification agenda by tabling several proposals intended to "*cut red tape*".⁶⁸¹ Among the legislative files withdrawn under this initiative was the AILD proposal. The withdrawal was justified on the grounds that there was "*no foreseeable agreement*".⁶⁸² However, the Commission left the question open, stating that it would assess whether to table a revised proposal or explore alternative approaches to address AI liability concerns.⁶⁸³

The decision to withdraw the AILD provoked considerable reaction within political and academic circles, particularly as it coincided with Commissioner McGrath's public defense of the proposal. On the same day as the withdrawal announcement, McGrath had emphasised the importance of legal certainty in liability matters for reducing risks and encouraging investment in AI, especially for SMEs and startups.⁶⁸⁴ The withdrawal

⁶⁷⁷ EUROPEAN COMMISSION, "Communication from the Commission to the European Parliament, the European Council, the Council, the European economic and social Committee and the Committee of the Regions – A Competitive Compass for the EU", COM(2025) 30 final, 29th of January 2025.

⁶⁷⁸ See for example, EUROPEAN COMMISSION, Single market strategy 2025, available on https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14475-Single-market-strategy-2025_en, accessed 16th of May 2025.

⁶⁷⁹ N. DIVISSENKO, "From Draghi report to the European Commission's regulatory agenda: regulatory transformation or deregulation?", *op. cit.*

⁶⁸⁰ *Ibid.*

⁶⁸¹ EUROPEAN COMMISSION, "Commission proposes to cut red tape and simplify business environment", 26th of February 2025, available on https://commission.europa.eu/news/commission-proposes-cut-red-tape-and-simplify-business-environment-2025-02-26_en, accessed 16th of May 2025.

⁶⁸² EUROPEAN COMMISSION, "Annexes to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee, and the Committee of the Regions – Commission work programme 2025", COM(2025) 45 final, 11th of February 2025, p. 26.

⁶⁸³ *Ibid.*

⁶⁸⁴ L. BERTUZZI, "This didn't age very well, Justice Commissioner Michael McGrath replied to MEPs Andreas Schwab and Arba Kokalari", in *LinkedIn*, February 2025, available on https://www.linkedin.com/feed/update/urn:li:activity:7295738620068442113/?updateEntityUrn=urn%3Ali%3Afs_updateV2%3A%28urn%3Ali%3AAactivity%3A7295738620068442113%2CCEED_DETAIL%2CEMPTY%2CDEFAULT%2Cfalse%29, accessed 16th of May 2025.

prompted Axel Voss, the European Parliament rapporteur for the AILD, to denounce the withdrawal as a *"strategic mistake"*.⁶⁸⁵ Voss and others highlighted the importance of harmonised rules in creating a level playing field across the EU, bringing fairness and clarity to both businesses and consumers, and signaled that the withdrawal would signal a retreat from the EU's commitment to ensuring effective accountability and compliance mechanisms in its digital framework.⁶⁸⁶ Additionally, lawmakers from the Internal Market and Consumer Protection Committee expressed their support for the AILD by voting in favour of continuing work on AI-related liability rules.⁶⁸⁷ Nonetheless, not all political actors and representatives of the tech industry shared this view. Some questioned the added value of the AILD, stating that the rPLD was sufficient to protect consumers.⁶⁸⁸ More recently, Henna Virkkunen presented the AI Continent Action Plan, expressing skepticism about the AILD's effectiveness. According to Virkkunen, a directive would not have ensured a uniform implementation because Member States would have implemented the rules in different ways. Instead, she advocated for the use of a regulation, which would be directly applicable and better suited to ensuring legal uniformity within the internal market. Virkkunen also emphasized the need to first fully implement the AI Act before assessing whether additional AI liability are necessary.⁶⁸⁹ The future of the AILD is now in a grey zone, with the Commission expected to decide by August whether to definitively withdraw the proposal or revisit the issue with a revised legislative initiative.⁶⁹⁰

⁶⁸⁵ C. KROET, "Don't drop AI liability mechanism, lead lawmaker warns Commission", in *Euronews*, 12th of February 2025, available on <https://www.euronews.com/next/2025/02/12/dont-drop-ai-liability-mechanism-lead-lawmaker-warns-commission>, accessed 16th of May 2025.

⁶⁸⁷ C. KROET, "Lawmakers reject Commission decision to scrap planned AI liability rules", in *Euronews*, 18th of February 2025, available on <https://www.euronews.com/next/2025/02/18/lawmakers-reject-commission-decision-to-scrap-planned-ai-liability-rules>, accessed 16th of May 2025.

⁶⁸⁹ C. KROET, "EU Tech Commissioner defends scrapping of AI liability rules", in *Euronews*, 9th of April 2025, available on <https://www.euronews.com/next/2025/04/09/eu-tech-commissioner-defends-scrapping-of-ai-liability-rules>, accessed 16th of May 2025.

⁶⁹¹ L. JAROVSKY, "BREAKING: The EU withdraw the AI Liability Directive. Make no mistake: this has NOTHING to do with legal arguments and everything to do with POLITICS", in *LinkedIn*, February 2025, available on https://www.linkedin.com/feed/update/urn:li:activity:7295382523319144448/?updateEntityUrn=urn%3Aai%3Afs_updateV2%3A%28urn%3Aai%3Aactivity%3A7295382523319144448%2CFEED_DETAIL%2CEMPTY%2CDEFAULT%2Cfalse%29, accessed 16th of May 2025.

⁶⁹³ A. Voss, "In today's exchange with Henna Virkunen in the Legal Committee of the European Parliament I have against underlined how important the AILD is to complement the AI Act and the PLD", in *LinkedIn*, April 2025, available on https://www.linkedin.com/posts/axel-voss-a1744969-joined-letter-on-the-ai-liability-directive-activity-7315737756901474304-EU5/?utm_source=share&utm_medium=member_desktop&rcm=ACoAAEyZ8YQBfZw3lVARjR_f1wUVB70wLF_CoBq, accessed 16th of May 2025.

wrong instrument to target for simplification. Liability rules do not constitute "*red tape*" in the conventional sense, as they do not impose prescriptive obligations *ex ante* but rather provide *ex-post* remedies when harm occurs. Indeed, even if extra-contractual liability rules may induce or incentivise AI providers and deployers to raise their standards of care – compared to those required by the AI Act, especially for the less or non-regulated categories of AI systems –⁶⁹⁴ liability regimes operate on a reactive basis: they impose obligations only when legally recognised harm has occurred, at which point the responsible party is required to compensate the injured party in accordance with established legal principles. This means that, in the absence of harm, the liability regime remains dormant, generating no active compliance obligations for the regulated entities. From this perspective, anticipatory regulation – such as the AI Act – creates a greater administrative burden. Therefore, Häcker argued that, if the Commission truly sought to cut red tape, it should have focused on simplifying the AI Act or similar instruments providing *ex-ante* obligations rather than eliminating procedural liability frameworks like the AILD.⁶⁹⁵

Häcker also pointed out that the AILD had become an easy political target due to its stalled progress in the legislative process. While the file was under active discussion in the European Parliament, its momentum was insufficient to insulate it from the broader deregulatory narrative. Yet he cautioned that its removal undermined the EU's long-term strategy for fostering responsible and sustainable AI development. The rPLD, which was adopted with less attention than the AI Act, does extend to AI but remains, as previously discussed, limited in scope, which means that neither the rPLD nor national tort laws can consistently offer effective redress across the Union regarding harms not covered by the rPLD. This approach creates legal uncertainty for both consumers and developers, particularly given that many AI systems operate across borders. From a competitiveness and innovation perspective, the absence of a harmonised AI liability framework disadvantages companies seeking legal clarity and increases the costs of compliance with fragmented national rules. More fundamentally, Häcker maintained that the AILD was an inappropriate starting point for the Commission's simplification campaign because, as a procedural directive, it did not substantially define when liability arises or the exact legal standards to be applied. Rather, it aimed to harmonise procedural conditions for redress and burden of proof, especially in complex AI-related cases. In this sense, its removal does not simplify substantive rules but instead deprives the EU of a tool that could enhance access to justice.

Häcker has, eventually, expressed his support for the development of a single, fully harmonised framework for AI liability.⁶⁹⁶ Such a framework, he argues, would not only enhance legal certainty for businesses but also provide a clear path for consumers seeking redress. Importantly, it would also facilitate a more structured approach to designing the broader architecture of AI regulation. In this vision, the future regulatory landscape could consist of a complementary relationship between the AI Act and a comprehensive AI liability regime. This evolution would present a valuable comparative opportunity. By analysing the interplay between the AI Act and a potential liability framework, policymakers and scholars could identify existing weaknesses, redundancies, or loopholes within the current regulatory regime. This process could lead to a more refined and efficient structure that balances the need for consumer protection with the imperative of reducing unnecessary regulatory complexity. Such reflection may prompt the question of whether a dual framework is required across all sectors,

⁶⁹⁴ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 45.

⁶⁹⁵ L. JAROVSKY, "AI Compliance Challenges: Liability, Transparency and Fairness, with Philipp Häcker", YouTube, 27th of March 2025, available on <https://www.youtube.com/watch?v=7jicxDrSyTw>, accessed 13th of May 2025.

⁶⁹⁶ *Ibid.*

or whether certain provisions in the AI Act could be streamlined in favour of relying more extensively on liability mechanisms in specific contexts.⁶⁹⁷

Beyond the public debate surrounding the withdrawal of the AILD, two additional factors can be identified to help explain both the decision to withdraw the proposal and the reluctance of certain Member States to support it. First, as previously discussed, the Directive faced significant structural and legal shortcomings that undermined its effectiveness and coherence from the onset. Second, the proposal appeared to lack a genuinely interdisciplinary approach to AI liability, as well as sufficient empirical grounding and technical expertise. These deficiencies likely contributed to the perception that the Directive was ill-equipped to address the complex, cross-cutting nature of AI-related harms and responsibilities, thereby reinforcing opposition among Member States.⁶⁹⁸

7.3. The importance of an interdisciplinary approach regarding AI liability

Effective AI regulation necessitates an interdisciplinary approach.⁶⁹⁹ Given that policymakers often lack technical expertise in AI, legislative efforts should be informed by empirical evidence and the input of domain experts. A core critique of the AILD is that it was primarily grounded in stakeholder opinion rather than objective data, risking a response to perceived rather than actual risks. This contrasts with the EU's Better Regulation Agenda⁷⁰⁰, Article 114 TFEU, the case law of the CJEU⁷⁰¹ and the precautionary principle⁷⁰², which emphasise the use of scientific evidence and the consideration of new developments based on objective facts.⁷⁰³

While the Commission conducted consultations and commissioned expert studies in the four years leading to the AILD proposal, the process displayed several limitations. The consultations asked participants to respond to pre-selected problems and policy options, potentially indicating a predetermined direction. Moreover, the Commission consulted external experts and launched several studies: a comparative legal analysis, a behavioural economics study, and an economic impact assessment. Yet the Commission did not always align its policy choices with the majority views expressed, such as the widespread support for strict liability in high-risk AI applications, which was ultimately dismissed without strong evidentiary backing.⁷⁰⁴ Besides, the involvement of computer scientists and technical AI experts remained minimal. Only three of the seventeen academics consulted had a computer science background, and none of the key studies integrated substantial technical insight. This omission weakened the proposal's understanding of critical AI features⁷⁰⁵

The shortcomings in the AILD's evidentiary foundation mirror similar criticisms of the AI Act. Studies note that both instruments often reflect public perception rather than empirical harm data. For example, the fact that high-

⁶⁹⁷ *Ibid.*

⁶⁹⁸ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, pp. 34 – 42.

⁶⁹⁹ J. DE COOMAN and L. GROZDANOVSKI, "Forget the Facts, Aim for the Rights! – On the Obsolescence of Empirical Knowledge in Defining the Risk/Rights-Based Approach to AI Regulation in the European Union", *Rutgers Computer & Tech Law Journal*, 2023, Vol. 49, pp. 217-218;

⁷⁰⁰ EUROPEAN COMMISSION, "Communication from the Commission to the European Parliament, the Council, The European Economic and Social Committee of the Regions, Better regulation for better results - An EU agenda", COM(2015) 215 final, pp. 6-7.

⁷⁰¹ Judgment of the Court of 8 September 2011, *Monsanto SAS and Others v Ministre de l'Agriculture et de la Pêche*, Joined cases C-58/10 to C-68/10, EU:C:2011:553.

⁷⁰² PUBLICATION OFFICE OF THE EUROPEAN UNION, "Precautionary principle", *EUR-Lex*, available on https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:precautionary_principle#:~:text=The%20precautionary%20principle%20is%20an,should%20not%20be%20carried%20out, accessed 16th of May 2025.

⁷⁰³ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 58.

⁷⁰⁴ EUROPEAN COMMISSION, "Adapting Civil Liability Rules to the Digital Age and Artificial Intelligence: Factual summary report on public consultation", 6 April 2022, pp. 2 – 10.

⁷⁰⁵ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 39.

risk AI categories in the AI Act are not grounded in statistical evidence of past harm, but rather in anticipated risks was one of the elements that undermined the effectiveness of the AILD.⁷⁰⁶

7.4. Policy prototyping

In light of the previously discussed lack of empirical grounding in the AILD, tools such as regulatory sandboxes – where AI liability provisions may be tested in a protected environment – and policy prototyping could help integrate evidence-based methods into AI policymaking. Policy prototyping, in particular, offers a structured process for testing draft policies prior to adoption. This typically involves four stages: (i) drafting, (ii) mock implementation by experts and stakeholders, (iii) collection of feedback, and (iv) subsequent policy revision based on this feedback.⁷⁰⁷ Policy prototyping facilitates the active engagement of diverse stakeholders and subject-matter experts throughout the policymaking process. This approach enables the systematic testing and gradual refinement of draft regulatory measures through cycles of trials and errors, prior to their formal adoption. By doing so, policymakers can comprehensively assess the potential impacts, advantages, and shortcomings of proposed rules. Such iterative evaluation fosters the development of more effective and evidence-based policy frameworks, thereby mitigating the risk of societal costs associated with inappropriately designed legislations. This method offers several advantages: it provides a *"fitness for purpose"* check, enhances legal certainty, and encourages broader buy-in by involving diverse actors, including civil society, industry and technical experts.⁷⁰⁸

However, the success of such initiatives depends heavily on participant composition. Ideally, they should reflect interdisciplinary expertise and develop nuanced frameworks grounded in real-world complexities and supported by facts. Yet, without transparency and balance, prototyping risks being co-opted as a lobbying tool by powerful industry actors.⁷⁰⁹ Notably, some prototyping initiatives have already been conducted in relation to the AI Act. Meta's Open Loop program tested several AI Act provisions, but its findings must be approached with caution given its corporate interests and lack of institutional neutrality.⁷¹⁰ In contrast, experiments led by the Flemish Knowledge Centre Data & Society, which tested transparency and oversight provisions of the AI Act, represent a more credible model for future EU-led prototyping, including for AI liability frameworks.⁷¹¹ Had similar experiments been conducted during the development of the AILD, the draft could have benefited from critical interdisciplinary insights. For instance, prototyping the obligation to disclose evidence in cases involving high-risk AI could have clarified what constitutes *"relevant"* information and, more specifically, which information should have been disclosed to the claimant.⁷¹² Involving computer scientists would help identify technically necessary disclosures, while social scientists could assess how to communicate such information effectively. Empirical research suggests that overloading claimants with overly technical explanations may hinder rather than support effective legal redress. Instead, simplified and well-structured disclosures are more likely to meet

⁷⁰⁶ *Ibid*; M. EBERS, "Truly Risk-Based Regulation of Artificial Intelligence: How to Implement the EU's AI Act", *European Journal of Risk Regulation*, 2024, p. 9

⁷⁰⁷ B. BENICHO, T. GILS and K. VRANCKAERT, "Design thinking in the legislative process: the key to useable legislation?", in *CiTiP blog*, 2021, available on <https://www.law.kuleuven.be/citip/blog/design-thinking-in-the-legislative-process/>, accessed on the 18th of May 2025.

⁷⁰⁸ *Ibid*; J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 40.

⁷⁰⁹ B. BENICHO, T. GILS and K. VRANCKAERT, *Ibid*.

⁷¹⁰ *Ibid*.

⁷¹¹ J. DE BRUYNE *et al.*, "From Policy To Practice: Prototyping the EU AI Act's Transparency Requirements", *Knowledge Centre Data & Society*, 2024.

⁷¹² DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 41; W. DE MULDER, "Explainable artificial intelligence and the social sciences: a plea for interdisciplinary research", *AI & Society*, 2024, p. 14.

evidentiary needs.⁷¹³ This kind of evidence-based grounding was noticeably absent from the AILD process, but could prove essential in future regulatory efforts.⁷¹⁴

7.5. To regulate or not to regulate?

Having examined the rPLD, the AILD proposal, and the relevance of an interdisciplinary approach regarding AI liability, this section addresses the question of whether the regulation of extra-contractual liability for damages caused by AI systems should take place at the EU level, and the practical implications related to the absence of harmonisation. Without additional EU intervention, the competence to regulate extra-contractual liability for AI systems remains with the Member States. National laws – whether general or AI-specific, if adopted – will continue to apply alongside the rPLD. However, understanding the ramifications of this legal framework requires a deeper analysis.⁷¹⁵

The AI Act and extra-contractual liability rules are designed to be complementary. The AI Act serves as an *ex-ante* risk-regulation instrument, whereas extra-contractual liability offers *ex-post* compensatory measures. The AI Act includes penalties and individual safeguards – such as the right to complain to the market authority⁷¹⁶ and to receive an explanation of individual decision-making⁷¹⁷ – but these have been considered as insufficient.⁷¹⁸ The current EU regime currently limits AI-related extra-contractual liability to the scope of the rPLD and its assessment of products' defectiveness of that confines the EU's liability regime to damages directly resulting from safety standard violations, thereby incorporating certain provisions of the AI Act.⁷¹⁹

This approach excludes two different scenarios. First, it omits cases where harm is caused by factors other than product defects, and where Member States retain the authority to legislate on AI-specific extra-contractual liability, allowing injured parties to pursue remedies under diverse national frameworks. The (proposed) withdrawal of the AILD has not materially altered this situation, as the proposal addressed only procedural aspects and left substantive law to national discretion.⁷²⁰ Second, it excludes damages that do not fall within the limited categories covered by the rPLD, which include death, personal injury, medically-recognised psychological harm, corruption of non-professional and data damage to property, with the exception of: *"the defective product itself, a product damaged by a defective component that is integrated into – or interconnected with – that product by the manufacturer or within the manufacturer's control, and property used exclusively for professional purposes"*.⁷²¹ In those scenarios, the rPLD prevents Member States from expanding the scope of compensable AI-related damages linked to product defects. Hence, damages falling outside the Directive's scope remain uncompensated under harmonised EU rules, leaving legal protection subject to divergent and potentially inconsistent national frameworks, with no assurance of national legislative initiatives tailored to the specificities of AI.⁷²²

⁷¹³ T. MILLER, "Explanation in artificial intelligence: Insights from the social sciences", *Artificial Intelligence*, 2019, Vol. 267, pp. 1-38.

⁷¹⁴ DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 41.

⁷¹⁵ *Ibid.*

⁷¹⁶ Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *O.J.E.U.*, 12th of July 2024, art. 85.

⁷¹⁷ *Ibid.*, art. 86.

⁷¹⁸ EDRI, "EUs AI Act fails to set gold standard for human-rights", the 3rd of April 2024, available on <https://edri.org/our-work/eu-ai-act-fails-to-set-gold-standard-for-human-rights/>, accessed on the 18th of May 2025.

⁷¹⁹ DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 41.

⁷²⁰ *Ibid.*

⁷²¹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 6.

⁷²² *Ibid.*, art. 7.1.

The question of whether the EU should regulate AI-related extra-contractual liability must be examined in light of the principle of subsidiarity, according to which the EU may only act if the objectives pursued can, by reason of the scale or effects of the proposed action, be more effectively achieved at EU level.⁷²³ In its explanatory memorandum, the Commission contended that divergent national rules would increase legal uncertainty and lead to market fragmentation, thereby justifying EU action under Article 114 TFEU. To assess subsidiarity, two questions must be addressed: (i) what are the risks associated with leaving the regulation of extra-contractual liability exclusively to national legal systems; and (ii) to what extent should the European Union intervene, if it is established that these risks cannot be effectively addressed at the national level?⁷²⁴

7.5.1 Leaving regulation up to Member States

Regarding the first question, the Commission identified the opacity and the lack of transparency of AI systems as the principal obstacles preventing claimants from satisfying traditional standards of proof.⁷²⁵ Addressing these difficulties requires specific legal mechanisms to ensure access to evidence and facilitate causal inference. If left to Member States, these cases will be governed by national fault-based liability regimes or, in certain jurisdictions, by strict liability frameworks applicable to ultrahazardous activities, which may potentially encompass autonomous vehicles.⁷²⁶

Such an approach would have the advantage of being tailored to each Member State's legal order and adaptable to national specificities.⁷²⁷ However, responses will vary, potentially resulting in twenty-seven divergent liability regimes and a significant increase in compliance costs. Such fragmentation would influence the strategic decisions of businesses regarding market entry, incentivising the prioritisation of jurisdictions with lower compliance burdens and reduced exposure to liability. This dynamic could lead to regulatory competition among Member States and a "*race to the bottom*"⁷²⁸, that would undermine consumer protection and the pursuit of the development of the Digital Single Market. Alternatively, Member States may choose not to legislate on AI liability at all. In this scenario, existing general liability laws would apply, likely without accounting for AI-specific challenges. This would exacerbate fragmentation and result in inconsistent levels of victim protection across the Union since the rPLD only covers a narrow subset of damages caused by defective products. This scenario could abandon victims of non-defective, yet harmful, AI outputs to legal uncertainty and procedural hurdles, with no coherent rationale for the disparity in legal treatment between comparable harms.⁷²⁹

Nonetheless, these concerns ought to be nuanced. Indeed, national courts are not entirely left to their own regarding the interpretation and application of the law, as they frequently rely on the principles and provisions of EU law in their legal reasoning. This implies that liability claims involving rights derived from EU law are not exclusively domestic matters but instead fall under the broader purview of EU legal principles, notably the principle of effectiveness which prohibits the application of national procedural or substantive rules that would render the exercise of EU-based claims excessively difficult. The CJEU has already upheld the right of

⁷²³ DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 47.

⁷²⁴ *Ibid.*

⁷²⁵ EUROPEAN COMMISSION, "Commission staff working document impact assessment report accompanying the document Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence", SWD(2022) 319 final, the 28th of September 2022, pp. 120 – 121, 198 – 199.

⁷²⁶ D. RIMKUTE, "AI Liability After the AILD Withdrawal: Why EU Law Still Matters", in *Faculty of Law Blogs – University of Oxford*, the 1st of April 2025, available on <https://blogs.law.ox.ac.uk/oblb/blog-post/2025/04/ai-liability-after-aild-withdrawal-why-eu-law-still-matters>, accessed on the 17th of May 2025.

⁷²⁷ DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 54.

⁷²⁸ *Ibid.*, p. 47; W.L. CARY, "Federalism and Corporate Law: Reflections Upon Delaware", *Yale Law Journal*, 1974, vol. 83(4).

⁷²⁹ *Ibid.*

individuals to seek compensation even in the absence of a harmonised EU liability regime. Importantly, the Court has emphasised that national liability rules must not hinder the enforcement of rights conferred by EU law, which reinforces both the principle of effectiveness and the fundamental requirement that claimants must have access to effective judicial remedies.⁷³⁰

Furthermore, the influence of EU law may extend to the concept of strict liability for ultrahazardous activities, as the criteria used to determine ultrahazardous activities bear close resemblance to the AI Act's categorisation of high-risk AI systems. This suggests that EU law may indirectly shape national courts' interpretation of liability components. The requirements imposed on national courts by the principle of effectiveness in AI-related liability cases can be found in the case law of the CJEU.⁷³¹ In *Sanofi Pasteur*⁷³², the Court held that, in the absence of direct evidence, national courts may be compelled to rely on factual presumptions to ensure effective enforcement of EU rights. A factual presumption, in this context, refers to a presumption developed through precedents based on circumstantial evidence, when direct proof is unavailable. In *Sanofi Pasteur*, the Court concluded that evidentiary rules prohibiting circumstantial evidence or requiring specific medical research to establish causation would undermine the Directive's effectiveness.⁷³³ By extension, in complex AI-related liability claims – where establishing fault or causation is inherently difficult – national courts may also be required to adopt such presumptions.⁷³⁴

This approach leads to judicial outcomes that closely resemble the provisions of the AILD, which had introduced rebuttable presumptions concerning causation and fault. Pre-existing legal doctrines across Member States already reflect similar reasonings. One prominent example is the doctrine of *res ipsa loquitur* ("the thing speaks for itself")⁷³⁵, which permits courts to infer fault or causation in the absence of direct evidence when the circumstances strongly suggest negligence. This doctrine is analogous to Article 4.1(b) AILD, which proposed a presumption of causality based on reasonable likelihood of causation.⁷³⁶ Further comparative examples include France's "*proof by exclusion*"⁷³⁷ and Germany's "*burden reversal*"⁷³⁸ principle. In the French legal system, causation is presumed if no other plausible cause exists, effectively shifting the burden of proof to the defendant. Similarly, under German law, if a product increases the risk of harm and the risk materialises, a presumption of liability may follow. Another relevant principle, echoed in Article 3.5 AILD, is the presumption of non-compliance where a party withholds evidence. This aligns with the *contra spoliatorem* ("against the spoliator")⁷³⁹ doctrine, under which courts may infer that missing or concealed evidence would have been adverse to the withholding party. When applied in the context of AI, this principle suggests that non-compliance with the AI Act could support an inference of liability, especially when such non-compliance obstructs access to evidence necessary for substantiating a claim.⁷⁴⁰

If the answer to the first question could confirm the necessity of EU intervention to advance a true Digital Single Market⁷⁴¹, it is also worth noting that leaving regulation up to the Member States may not be as problematic as

⁷³⁰ D. RIMKUTE, "AI Liability After the AILD Withdrawal: Why EU Law Still Matters", *op. cit.*

⁷³¹ *Ibid.*

⁷³² Judgment of the Court of 21 June 2017, *N. W and Others v Sanofi Pasteur MSD SNC and Others*, C-621/15, EU:C:2017:484.

⁷³³ *Ibid.*, § 30 – 31.

⁷³⁴ D. RIMKUTE, "AI Liability After the AILD Withdrawal: Why EU Law Still Matters", *op. cit.*

⁷³⁵ F. DUNCAN and R. GOLDBERG, *Product Liability*, Oxford University Press, 2020.

⁷³⁶ D. RIMKUTE, "AI Liability After the AILD Withdrawal: Why EU Law Still Matters", *op. cit.*

⁷³⁷ C. VAN DAM, *European Tort Law*, Oxford University Press, 2013.

⁷³⁸ D. RIMKUTE, "AI Liability After the AILD Withdrawal: Why EU Law Still Matters", *op. cit.*; *Ibid.*

⁷³⁹ AMERICAN BAR ASSOCIATION, "Contra spoliatorem omnia praesumuntur", available on <https://www.americanbar.org/content/dam/aba-cms-dotorg/products/inv/book/214612/Introduction.pdf>, accessed on the 18th of May 2025.

⁷⁴⁰ D. RIMKUTE, "AI Liability After the AILD Withdrawal: Why EU Law Still Matters", *op. cit.*

⁷⁴¹ DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 54.

some fear, particularly in cases involving rights protected by EU law. Although the AILD was withdrawn, its core rationale and mechanisms are already reflected in existing EU jurisprudence and national legal traditions. The CJEU's case law ensures that national courts must uphold the principle of effectiveness in AI-related liability claims, requiring them to rely on circumstantial evidence and judicial presumptions when necessary.⁷⁴²

7.5.2 Harmonisation at the EU level

If the adoption of new legislation is deemed necessary, it is essential to determine the appropriate level of intervention. Even within the EU approach, further decisions must be made and, most notably, whether to proceed with a regulation⁷⁴³ or a directive, and – in the case of a directive – whether to pursue maximum or minimum harmonisation. Some scholars have suggested setting minimum standards at the EU level, while allowing national liability regimes to continue operating in parallel.⁷⁴⁴

A second fundamental question concerns the scope of the legal instrument. It may take a horizontal form, applying broadly across all sectors, or a sector-specific form, tailored to the unique characteristics of particular domains. A horizontal instrument, like the AILD and the rPLD, offers the advantage of providing a unified and streamlined set of rules for victims. Horizontal regimes offer simplicity and transparency, which may facilitate victims' access to compensation. However, a "one-size-fits-all" approach has its limitations, as horizontal frameworks often impose strict liability with capped compensation limits. Such caps may be ill-suited to domains where the harm caused by AI systems is more significant or more complex. The varied nature of AI applications may therefore render a horizontal approach insufficiently responsive to contextual needs.⁷⁴⁵

By contrast, a sectoral approach enables the law to reflect more closely the risks and specificities of each domain. It is inherently more adaptable and can be tailored to the particularities of how AI is deployed in specific sectors. Some argue that a technology and application-specific regime better complies with the principles of proportionality and subsidiarity, and reduces the risk of undue interference with national legal systems.⁷⁴⁶ Additionally, others similarly contend that existing sector-specific regulations already recognise the need for context-sensitive legal responses to technological deployment.⁷⁴⁷

7.6. Possible normative criteria to evaluate future proposals

Whether the European Union will adopt a quantitative assessment grounded in law and economics⁷⁴⁸, a qualitative evaluation⁷⁴⁹, or a broader evidence-based methodology, it will have to rely on normative criteria to assess the viability and desirability of each legal option. These normative criteria may be broadly categorised into two groups. First, internal criteria are those intrinsic to the legal system and include, among others, legal certainty and the coherence of the legal solution within the existing normative framework. These criteria ensure that any proposed legal reform aligns with established legal principles and enhances the predictability and reliability of the law. Second, external normative criteria, oppositely, are not inherent to the legal system but instead reflect broader policy goals or societal values. These may be further subdivided into three

⁷⁴² D. RIMKUTE, "AI Liability After the AILD Withdrawal: Why EU Law Still Matters", *op. cit.*

⁷⁴³ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, pp. 24 – 25.

⁷⁴⁴ M. BUITEN, A. DE STREEL & M. PEITZ, "CERRE Report: EU Liability Rules for the Age of Artificial Intelligence", *CERRE*, 2021, p. 48.

⁷⁴⁵ RAILS, "RAILS-Webinar: AI Liability – Where Should the European Union (Not) Go?", YouTube, 18 March 2025, available on <https://www.youtube.com/live/Tmj-B0g1Bzq?si=GWC684QbRngaCi-w>, accessed on the 18th of May 2025.

⁷⁴⁶ A. BERTOLINI, "Artificial intelligence and civil liability", *op. cit.*, p. 63.

⁷⁴⁷ M. BUITEN, A. DE STREEL & M. PEITZ, "CERRE Report: EU Liability Rules for the Age of Artificial Intelligence", *op. cit.*, p. 61.

⁷⁴⁸ G. CALABRESI, *The Cost of Accidents: A Legal and Economic Analysis*, *op. cit.*

⁷⁴⁹ O. DHEU, *Autonomous vehicles crashing the law? A prospective study of civil liability and compensation implication under Belgian, French, UK/English and EU law*, Wolters Kluwer, 2024.

subcategories: (i) "*claimants-friendly*" criteria include the ease of obtaining compensation, the clear identification of the liable party or compensating entity, the equal treatment of victims, and the correction of informational asymmetries; (ii) "*innovation-friendly*" criteria encompass the prevention of internal market fragmentation, the fair and efficient distribution of costs, and the simplification of legal processes; (iii) "*transversal*" criteria include cross-cutting considerations such as identifying the least-cost avoider, as well as the political and practical feasibility of adopting the legislative proposal. Still, this list is not exhaustive and additional criteria may be considered depending on the context and policy objectives at hand. Besides, the selection and prioritisation of normative criteria inevitably entail a degree of subjectivity. Any evaluation is inherently shaped by the values embedded in the choice of criteria, and in the relative weight assigned to each.⁷⁵⁰

⁷⁵⁰ J. DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 58.

8. Conclusion

8.1. How does the rPLD adapt to digital technologies, and particularly to AI?

The rPLD constitutes a significant update of the European Union's product liability regime, aiming to align the framework with the realities of digitalisation, emerging business models, and AI-driven technologies. Among its most notable innovations is the explicit inclusion of software within the definition of a product.⁷⁵¹ This clarification ensures that economic operators – including online platforms and actors who substantially modify products – can be held liable for damage caused by defective digital components.⁷⁵² In doing so, the rPLD brings contemporary configurations such as SaaS within the ambit of strict liability, thereby reinforcing legal certainty and consumer protection in the digital era.⁷⁵³

The Directive also broadens the scope of compensable damages to encompass medically-recognised psychological harm, damage caused to a product by an integrated or interconnected defective component, and the loss or corruption of non-professionally used data. These extensions appropriately reflect the interconnected nature of modern products and the types of harm likely to arise in digital contexts. Yet the Directive retains a limitation to non-professional property damage, thereby excluding harm to commercially-used property. This restriction – initially intended to be addressed under the AILD – remains a significant shortcoming.⁷⁵⁴

In relation to product defectiveness, the rPLD introduces important AI-specific considerations, including the role of software updates, cybersecurity risks, and the potential for continuous learning post-deployment.⁷⁵⁵ Despite these advancements, the central criterion for defectiveness – the level of safety which the general public is entitled to expect – remains unchanged. This standard, assessed from the perspective of the average consumer, has been criticised for its vagueness. However, its conceptual flexibility has historically enabled the CJEU to interpret the provision in a manner that favours consumer protection.⁷⁵⁶ In the context of AI, where risks may result from probabilistic errors that differ from traditional human failures, courts may increasingly draw on alternative interpretative frameworks such as infra- and suprahuman performance benchmarks, or refer to evolving sector-specific standards. The rPLD refrains from codifying these methodologies, perhaps deliberately leaving space for judicial evolution in response to case-specific complexities.⁷⁵⁷

A further area of innovation lies in the Directive's efforts to improve access to justice. The introduction of mechanisms for the disclosure of evidence and rebuttable presumptions of defectiveness and causality reflects an acknowledgment of the evidentiary difficulties faced by claimants, particularly in AI-related cases.⁷⁵⁸ These provisions aim to alleviate the asymmetry of information between injured parties and manufacturers, especially where claimants lack access to the internal workings of complex AI systems. However, their practical efficacy will be determined by the case law. For instance, while Article 9 requires that disclosed evidence be presented in an "*easily understandable*" format where proportionate, the threshold for relevance and proportionality is left to judicial discretion. This leaves open the risk that defendants may comply through voluminous disclosures

⁷⁵¹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 4.

⁷⁵² *Ibid.*, art. 4(15).

⁷⁵³ *Ibid.*, Recital 13.

⁷⁵⁴ *Ibid.*, art. 6; P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, pp. 19 – 24.

⁷⁵⁵ *Ibid.*, art. 7.

⁷⁵⁶ Judgment of the Court of 5 March 2015, *Boston Scientific Medizintechnik*, C-503/13, EU:C:2015:148.

⁷⁵⁷ RAILS, "RAILS-Webinar: AI Liability – Where Should the European Union (Not) Go? ", YouTube, 18 March 2025, available on <https://www.youtube.com/live/Tmj-B0g1Bzg?si=GWC684QbRngaCi-w>, accessed on the 18th of May 2025.

⁷⁵⁸ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 9 – 10.

that impose a considerable interpretative burden on claimants, often necessitating costly expert assistance.⁷⁵⁹

Similarly, Article 10's presumption of defectiveness and causality in cases of "*excessive difficulty*" does not shift the burden of proof entirely, but rather lowers the threshold to a standard of plausibility. While this adjustment may benefit some claimants, it remains insufficient to fully address the structural imbalances inherent in litigation involving technically complex AI systems and economically powerful defendants. As such, injured parties may still be deterred from initiating legal proceedings due to cost and technical barriers.⁷⁶⁰

With respect to defences available to economic operators, the rPLD retains traditional exemptions such as the regulatory compliance, state-of-the-art, and later-defect defences, while adapting them to digital realities.⁷⁶¹ Notably, the scope of the later-defect defence is narrowed: it no longer applies where the economic operator maintains control over the product, including through software updates, related services, or post-sale modifications.⁷⁶² This reflects the dynamic nature of digital products and rightly extends liability to cover foreseeable developments over the product's lifecycle. Moreover, Member States are permitted to restrict the state-of-the-art defence, potentially increasing consumer protection, though at the risk of deterring AI developers from entering certain markets where liability standards are higher.⁷⁶³

In sum, the rPLD represents a flexible and forward-looking instrument designed to adapt the EU product liability regime to the challenges of AI and digital technologies. Its reliance on open legal standards – rather than prescriptive definitions – allows for future judicial interpretation and adaptability across diverse contexts. Nevertheless, this openness also leaves several critical questions unresolved, including the evidentiary challenges facing claimants, the absence of explicit guidance on AI's probabilistic behaviours, and the lack of harmonisation regarding the state-of-the-art defence. The true impact of the rPLD will thus partially depend on its implementation by national courts and the interpretative direction taken by the CJEU in the coming years. Only then will it become clear whether the Directive has struck the appropriate balance between fostering innovation and ensuring effective access to justice for those harmed by defective AI-driven products.⁷⁶⁴

8.2. What was the objective of the AILD proposal, and which factors influenced its withdrawal?

Despite its withdrawal, the AILD marked a significant development in the European Union's efforts to modernise its liability framework in the context of emerging technologies. It represented the first serious attempt to introduce harmonised rules on non-contractual civil liability at the EU level, complementing the regulatory architecture of the AI Act. Its core objective was to improve the functioning of the internal market by establishing common procedural rules for fault-based liability in situations involving AI systems, thereby fostering legal certainty and promoting a level playing field among economic operators. The AILD would have also contributed to the coherence of the broader EU regulatory framework by adopting concepts and terminology consistent with the AI Act, thus enhancing coherence between both legislative frameworks. Importantly, the proposal signalled the EU's commitment to ensuring effective access to remedies for victims of AI-related harm, particularly in light of the increasing complexity and opacity of AI systems. Under many national tort regimes, claimants must

⁷⁵⁹ A. BERTOLINI, "Artificial intelligence and civil liability", *op. cit.*, p. 84.

⁷⁶⁰ J. DE BRUYNE, O. DHEU and C. DUCUING, "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *op. cit.*, p. 15 ; P. HÄCKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, pp. 18 – 19.

⁷⁶¹ Directive (EU) 2024/2853 of the European Parliament and of the Council of 23 October 2024 on liability for defective products and repealing Council Directive 85/374/EEC, *O.J.E.U.*, 18th of November 2024, art. 11.

⁷⁶² *Ibid.*, art. 11.2.

⁷⁶³ DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, p. 47.

⁷⁶⁴ RAILS, "RAILS-Webinar: AI Liability – Where Should the European Union (Not) Go? ", YouTube, 18 March 2025, available on <https://www.youtube.com/live/Tmj-B0g1Bzg?si=GWc684QbRnqaCi-w>, accessed on the 18th of May 2025.

establish not only a breach of a duty of care (or another fault-based standard) but also a causal link between the conduct of the tortfeasor and the damage suffered. In the context of highly automated, autonomous, and interconnected systems – where multiple actors contribute to the operation and deployment of an AI system – such requirements can prove prohibitively difficult to satisfy. In response, the AILD proposed procedural mechanisms designed to alleviate these evidentiary burdens, including obligations for the disclosure of relevant information and rebuttable presumptions of causality in situations where proving the causal link would otherwise be unreasonably difficult for the claimant. Nevertheless, there are several reasons why the withdrawal of the proposal can be understood as a pragmatic decision.⁷⁶⁵

First, the AILD was not conceived as a comprehensive or self-standing liability regime. Rather, it was limited in scope, relying entirely on national substantive rules regarding fault, causation, and damage. The proposal merely sought to supplement existing domestic regimes with harmonised procedural tools, rather than creating a unified framework at the European level. In doing so, it left the deep divergences that persist between Member States in the application and interpretation of core principles of fault-based liability unresolved.⁷⁶⁶ Second, the effectiveness of the AILD and its relationship with the rPLD, the AI Act, and other sector-specific liability regimes gave rise to significant concerns. Although the AILD proposal explicitly stated that it would not affect rights conferred under the rPLD, and although the rPLD similarly affirms its non-prejudice to national fault-based regimes, the boundaries between these instruments were far from clear. The potential overlap between the rPLD and the AILD – particularly in relation to the burden of proof, the scope of compensable damages, and the role of presumptions – risked introducing legal uncertainty. Additional clarification would have been required to delineate how these instruments would interact in practice.⁷⁶⁷ Third, the lack of an interdisciplinary approach further weakened the proposal's credibility. The absence of meaningful input from experts in computer science and related technical fields limited the proposal's ability to engage with the specificities of AI systems, including the challenges of algorithmic opacity, data dependence, and continuous learning. A more informed understanding of these technical dimensions might have led to more targeted and effective procedural mechanisms, particularly with regard to addressing the significant asymmetry of information between claimants and AI system developers or operators.⁷⁶⁸ Finally, political pressure – particularly from the United States – may have accelerated the withdrawal of the AILD, reflecting broader concerns about the global competitiveness of the EU's regulatory approach. However, this is likely not the sole explanation, as the Draghi Report had already pointed to the need for a more streamlined and coherent digital regulatory landscape within the Union.⁷⁶⁹

8.3. What is the impact of the proposed withdrawal of the AILD, and how should the EU react?

In light of the proposed withdrawal of the AILD, two divergent scenarios shape the future of AI-related civil liability in the European Union. On the one hand, the absence of further EU intervention would leave regulation to the Member States, preserving national autonomy and allowing for tailored legal responses. However, this decentralised approach risks creating a fragmented legal landscape, characterised by inconsistent levels of

⁷⁶⁵ DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, pp. 16 – 18.

⁷⁶⁶ Proposal for a Directive of the European Parliament and of the Council on adapting non-contractual civil liability rules to artificial intelligence, COM/2022/496 final, art. 1.

⁷⁶⁷ DE BRUYNE *et al.*, "Research Briefs on Artificial Intelligence and Liability – Some points of Attention and Future Perspectives", *op. cit.*, pp. 16 – 18.

⁷⁶⁸ *Ibid.*, pp. 34 – 42.

⁷⁶⁹ L. JAROVSKY, "AI Compliance Challenges: Liability, Transparency and Fairness, with Philipp Häcker", YouTube, 27th of March 2025, available on <https://www.youtube.com/watch?v=7jicxDrSyTw>, accessed 13th of May 2025; RAILS, "RAILS-Webinar: AI Liability – Where Should the European Union (Not) Go?", YouTube, 18 March 2025, available on <https://www.youtube.com/live/Tmj-B0q1Bzq?si=GWC684QbRngaCi-w>, accessed on the 18th of May 2025.

victim protection, divergent liability standards, and elevated compliance costs. Businesses may gravitate towards jurisdictions with lighter regulatory burdens, potentially triggering regulatory competition and undermining the integrity of the Digital Single Market. Moreover, without harmonised rules, damages falling outside the scope of the rPLD would remain subject to heterogeneous national regimes.⁷⁷⁰ While some Member States may introduce AI-specific frameworks, others may rely on general tort law mechanisms potentially ill-suited to the unique challenges posed by AI. Yet despite these risks, this fragmented model may not lead to complete legal incoherence as EU law would continue to exert indirect influence, particularly through the CJEU's jurisprudence and the principle of effectiveness. National courts would remain under an obligation to interpret domestic rules in a manner that ensures the practical enforcement of rights protected by EU law. In this context, courts may adopt evidentiary presumptions – such as those recognised in *Sanofi Pasteur* or in national doctrines like *res ipsa loquitur* – which closely mirror several provisions of the AILD. These trends suggest that, even in the absence of formal harmonisation, a degree of functional convergence may emerge through judicial interpretation and shared legal principles.⁷⁷¹

On the other hand, should the EU decide to legislate, the design of such an intervention becomes critical. Determining the appropriate legal instrument – whether a directly applicable regulation or a more flexible directive – will shape the degree of harmonisation. While minimum harmonisation through a directive may offer subsidiarity and adaptability, it also risks perpetuating the fragmentation that harmonisation seeks to resolve. Equally important is the substantive scope of the legal instrument. A horizontal regime may promote clarity and equal access to remedies across sectors, yet its uniformity may limit responsiveness to sector-specific risks. In contrast, a targeted, domain-specific approach allows legal solutions to be tailored to the operational realities of AI deployment in distinct fields, better aligning with the principles of proportionality and subsidiarity. Evaluating these legislative choices necessitates a structured reliance on normative criteria. Internally, coherence with the existing legal order and the promotion of legal certainty are paramount. Externally, broader policy goals such as fairness for claimants and institutional feasibility must be considered. These criteria – ranging from simplifying access to remedies, to minimising legal uncertainty and promoting efficient risk distribution – reflect underlying value choices that will shape the acceptability and effectiveness of any future initiative. Ultimately, the EU faces a critical juncture. Whether it opts for a coordinated legislative framework or relies on national adaptation within the bounds of existing EU principles, the challenge remains to balance innovation, legal clarity, and the fundamental right to effective remedies in an increasingly AI-driven society.⁷⁷²

There is no universally optimal legal approach that can definitively address the multifaceted challenges posed by AI and its applications. The appropriate legal response will necessarily depend on the societal priorities that are adopted and the normative trade-offs that lawmakers are prepared to make. Nonetheless, even in the absence of a clear consensus on the necessity and form of EU-level harmonisation in AI-related civil liability, several foundational elements emerge that can guide future developments.

⁷⁷⁰ L. JAROVSKY, "AI Compliance Challenges: Liability, Transparency and Fairness, with Philipp Häcker", YouTube, 27th of March 2025, available on <https://www.youtube.com/watch?v=7jjcxDrSyTw>, accessed 13th of May 2025; RAILS, "RAILS-Webinar: AI Liability – Where Should the European Union (Not) Go? ", YouTube, 18 March 2025, available on <https://www.youtube.com/live/Tmj-B0q1Bzg?si=GWC684QbRngaCi-w>, accessed on the 18th of May 2025.

⁷⁷¹ D. RIMKUTE, "AI Liability After the AILD Withdrawal: Why EU Law Still Matters", *op. cit.*

⁷⁷² L. JAROVSKY, "AI Compliance Challenges: Liability, Transparency and Fairness, with Philipp Häcker", YouTube, 27th of March 2025, available on <https://www.youtube.com/watch?v=7jjcxDrSyTw>, accessed 13th of May 2025; RAILS, "RAILS-Webinar: AI Liability – Where Should the European Union (Not) Go? ", YouTube, 18 March 2025, available on <https://www.youtube.com/live/Tmj-B0q1Bzg?si=GWC684QbRngaCi-w>, accessed on the 18th of May 2025.

First, any legislative initiative should seek to align the conceptual frameworks of *ex-ante* product safety regulation – such as the AI Act – with those of *ex-post* liability regimes including the rPLD and, where justified by empirical evidence, a unique software liability instrument or a renewed version of the AILD.⁷⁷³

Second, several common questions relating to AI will have to be addressed. These include: (i) clarifying that compensable harm encompasses damage caused by unforeseeable actions or omissions of AI systems; (ii) recognising that the use of opaque models should not shield developers or operators from liability, particularly where such opacity obstructs access to evidence; (iii) considering rebuttable presumptions of causality where harmful outputs are later rectified through human intervention; (iv) providing guidance on the admissibility and role of fairness metrics to address algorithmic discrimination⁷⁷⁴; and (v) allocating responsibility across the AI value chain in a manner consistent with each actor's role and capacity to prevent harm.⁷⁷⁵

Third, should the EU pursue harmonisation, there is growing consensus that reforms must be informed by a detailed understanding of how existing legal frameworks fall short in addressing the challenges posed by AI. Complex litigation, already common in areas such as medical devices, illustrates the evidentiary and procedural hurdles national courts face. This underscores the need for a new comparative analysis of the twenty-seven Member States' liability regimes to identify shared difficulties and legal blind spots in AI-related claims. Lessons can also be drawn from third countries developing their own AI-specific liability models. Crucially, any future EU proposal must be grounded in empirical data and shaped through interdisciplinary collaboration, particularly with computer science experts. This is essential to ensure that any new legal instrument is not only technically robust, but also practically responsive – defining, for instance, what information must be disclosed by AI developers, how it should be disclosed, and under what conditions.⁷⁷⁶

Eventually, while the EU may lag behind the US in certain areas of technological innovation, dismantling its regulatory framework will not close this gap. Yielding regulatory authority to powerful private actors or deprioritising enforcement of digital laws would not strengthen the EU's global position. On the contrary, the EU's rights-based regulatory model remains one of its most powerful instruments of global influence. Rather than retreating from this model, the Union should complement it by strengthening the broader foundations of its technological ecosystem. Completing the Digital Single Market, advancing a robust Capital Markets Union to facilitate investment in European tech, modernising immigration frameworks to attract global talent, and harmonising bankruptcy laws to foster entrepreneurial risk-taking are all essential steps. These structural reforms would empower European innovators to scale more effectively, while maintaining the Union's commitment to fundamental rights. At a time when other global actors appear to be retreating from the defence of liberal democracy and the rule of law, the EU has the opportunity – and arguably the responsibility – to stand as a beacon of regulatory stability and principled governance. The future of the Brussels Effect depends not only on the extraterritorial impact of EU law, but on the confidence of Europeans in the values their regulations promote. Letting this influence erode because of external political pressure would not merely signal regulatory decline: it would constitute an unnecessary abdication of its global leadership in the protection of fundamental rights, democracy and the rule of law.⁷⁷⁷

⁷⁷³ *Ibid.*

⁷⁷⁴ P. HACKER, "Proposal for a directive adapting non-contractual civil liability rules to artificial intelligence – Complementary impact assessment", *op. cit.*, pp. 34 – 35; B. BOTERO ARCILA, AI Liability Along the Value Chain, *op. cit.*

⁷⁷⁵ P. HACKER, "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *op. cit.*, p. 35.

⁷⁷⁶ RAILS, "RAILS-Webinar: AI Liability – Where Should the European Union (Not) Go? ", YouTube, 18 March 2025, available on <https://www.youtube.com/live/Tmj-B0g1Bzg?si=GWC684QbRngaCi-w>, accessed on the 18th of May 2025.

⁷⁷⁷ A. BRADFORD, D. KELEMAN and T. PAVONE, Europe Could Lose What Makes It Great, in *Foreign Affairs*, 21st of April 2025, available on <https://www.foreignaffairs.com/europe/europe-could-lose-what-makes-it-great>, accessed on the 18th of May 2025.

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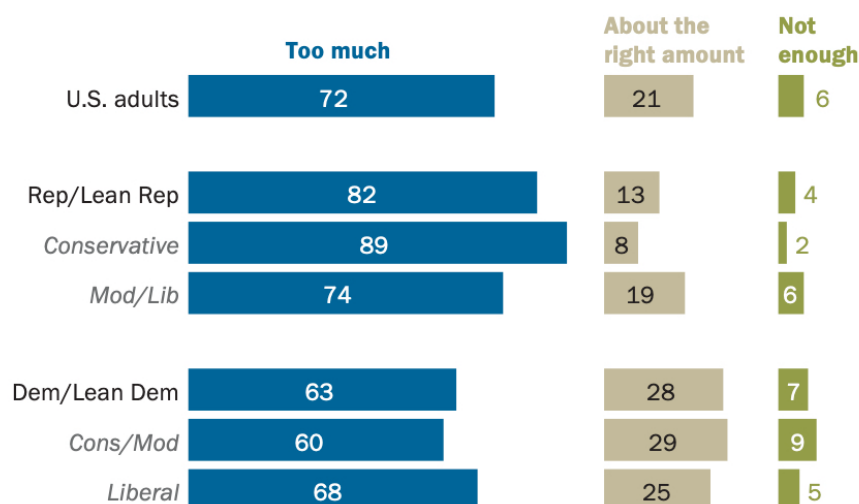
APPENDICES

APPENDIX 1

ANDERSON M., "Most Americans Say Social Media Companies Have Too Much Power, Influence in Politics", 22nd of July 2020, available on <https://www.pewresearch.org/short-reads/2020/07/22/most-americans-say-social-media-companies-have-too-much-power-influence-in-politics/>, accessed on the 19th of May 2025

Majorities across parties believe social media companies have too much power and influence in politics; Republicans are especially likely to say this

% of U.S. adults who say social media companies have ___ (of) power and influence in politics today



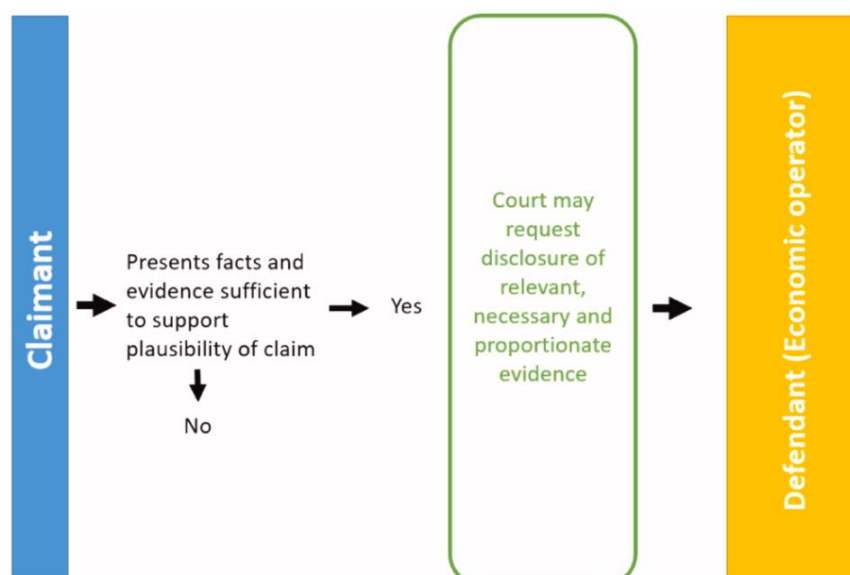
Note: Those who did not give an answer are not shown.

Source: Survey of U.S. adults conducted June 16-22, 2020.

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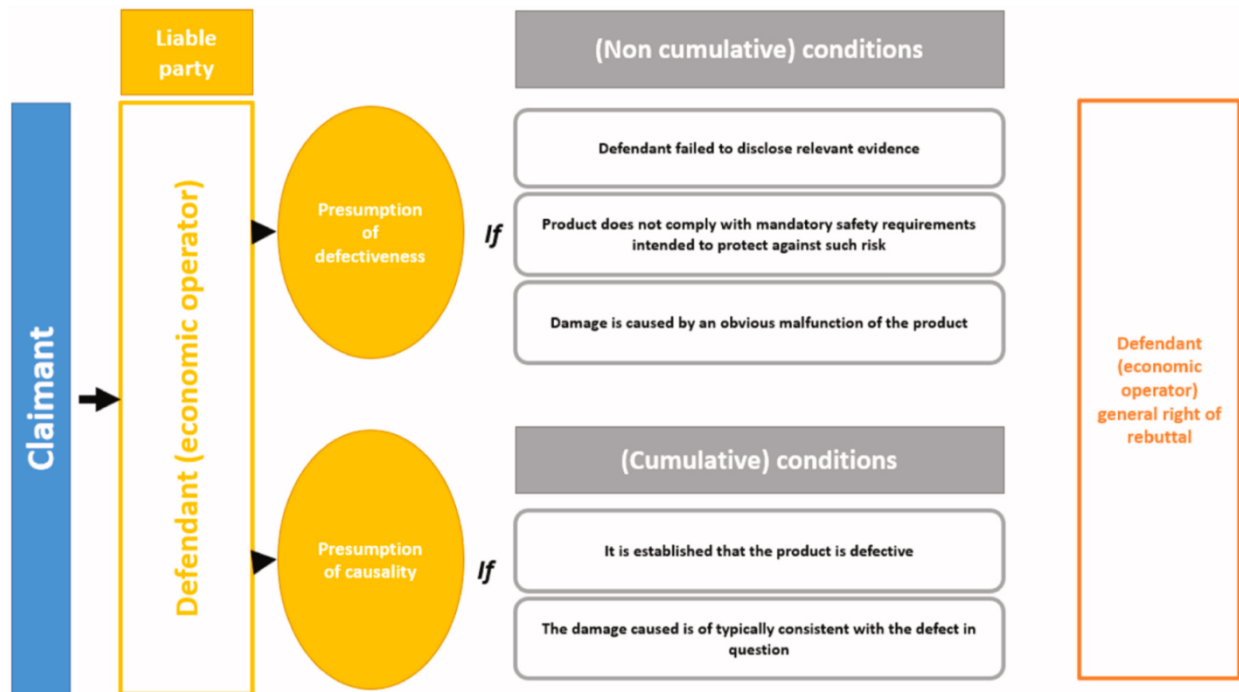
APPENDIX 2

DE BRUYNE J., DHEU O. and DUCUING C., "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *C.L.S.R.*, 2023, Vol. 51, p. 16



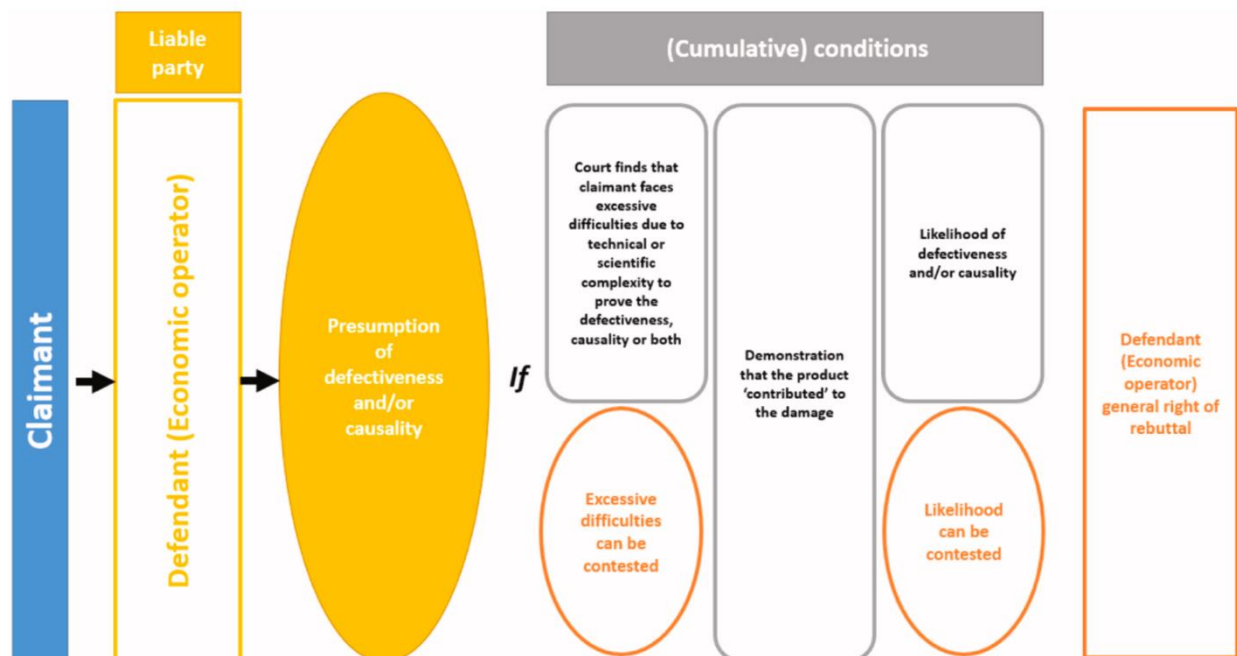
APPENDIX 3

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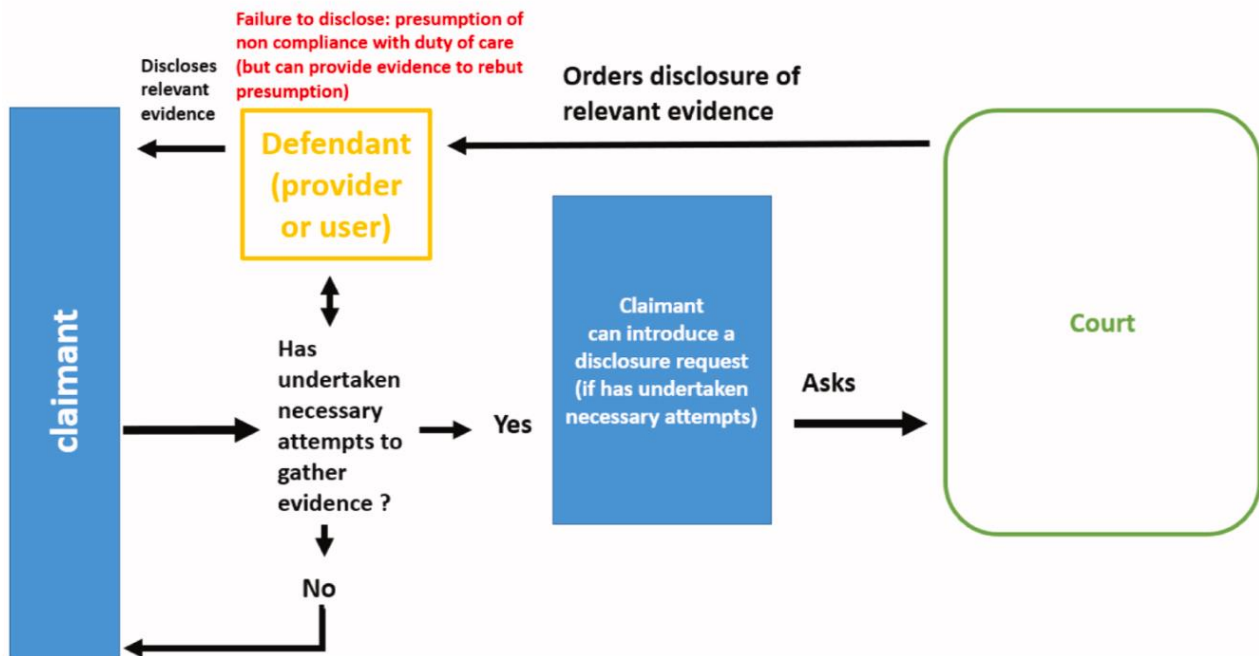
APPENDIX 4

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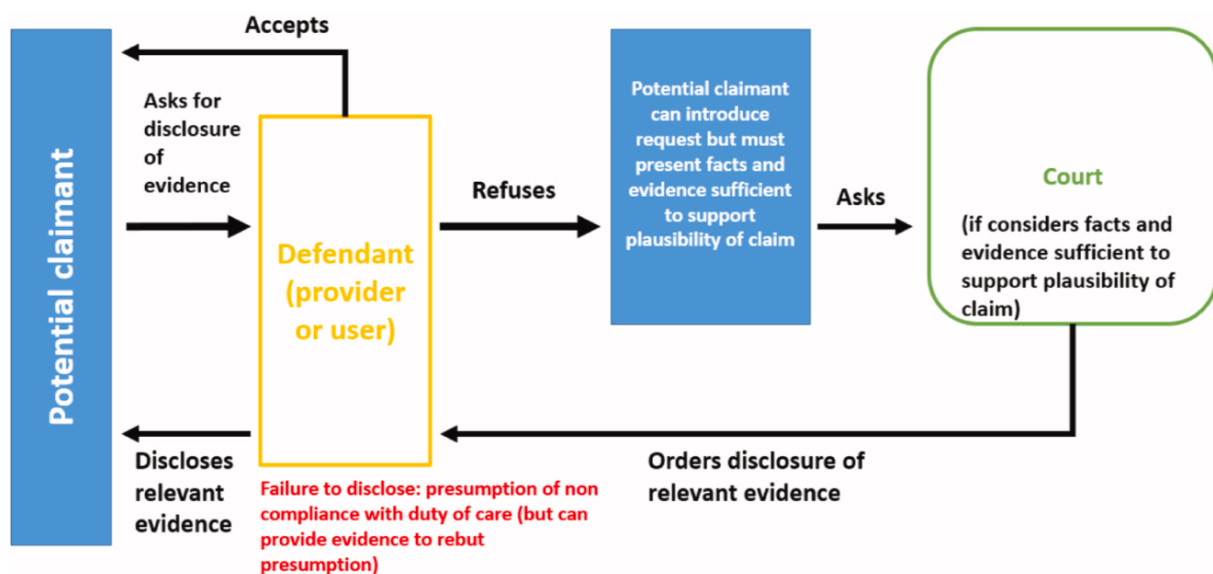
APPENDIX 5

DE BRUYNE J., DHEU O. and DUCUING C., "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *C.L.S.R.*, 2023, Vol. 51, p. 6.



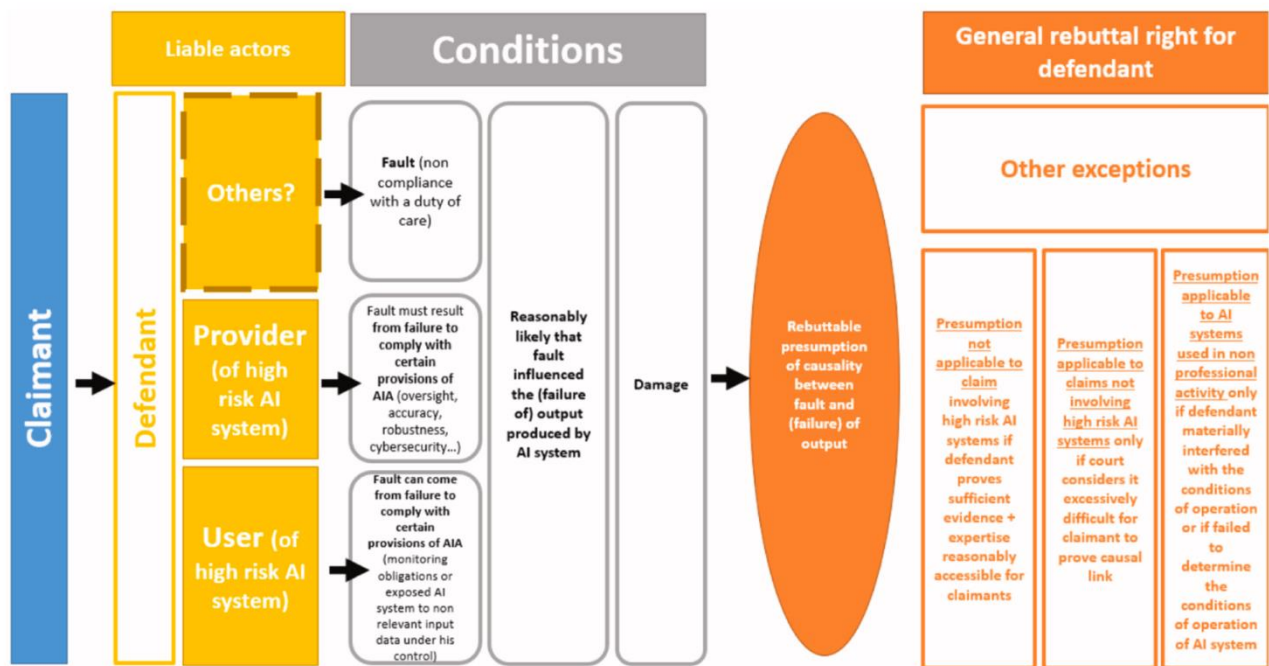
APPENDIX 6

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APPENDIX 7

DE BRUYNE J., DHEU O. and DUCUING C., "The European Commission's approach to extra-contractual liability and AI – An evaluation of the AI liability directive and the revised product liability directive", *C.L.S.R.*, 2023, Vol. 51, p. 8.



APPENDIX 8

HÄCKER, P., "The European AI Liability Directives – Critique of a Half-Hearted Approach and Lessons for the Future", *Computer Law and Security Review*, 2023, Vol. 51, p. 7.

PLD	AILD proposal
Claim rooted in EU law	Claim rooted in Member State law
Material and procedural aspects of product liability	Procedural aspects of non-contractual civil liability for AI systems
Applicable to physical products and software, including AI systems	Applicable to AI systems only
Supposedly strict liability	Fault-based liability
Claims against manufacturers and other entities in the supply chain	Claims against manufacturers, professional users and consumers
Eligible damage: privately used property, death or personal injury, and data loss	Eligible damage: potentially also professionally used property, fundamental rights and primary financial loss
Full harmonisation	Minimum harmonisation

