When Less Regulation Means More Complexity: The EU AI Liability Directive Withdrawal and Its Impact on European Technological Competitiveness

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Abstract

This paper examines the February 2025 withdrawal of the European Commission's AI Liability Directive (AILD) and its implications for European technological competitiveness. It challenges the assumption that deregulation inherently fosters innovation, demonstrating that eliminating harmonized liability rules paradoxically increases regulatory complexity through fragmentation across 27 national regimes. This fragmentation disproportionately burdens European AI companies—particularly startups and SMEs—attempting to scale across the Single Market, while advantaging large non-EU tech companies with greater resources to navigate regulatory complexity. Drawing on empirical evidence across sectors, it presents how well-designed liability frameworks can actually catalyze innovation by establishing market certainty, building consumer trust, and creating positive incentives for safety. Solutions are discussed for integrating liability considerations into Europe's broader digital sovereignty strategy through targeted harmonization of specific liability aspects and innovation-enabling frameworks, including regulatory sandboxes and compliance-by-design toolkits. This approach positions liability rules as enablers rather than impediments to sustainable technological advancement in the global AI landscape.

Introduction

In February 2025, the European Commission abandoned the proposed AI Liability Directive (AILD) (Parliament and Council 2022), designed to harmonize civil liability procedures for AI systems across the EU[1]. Proposed in September 2022 alongside the AI Act, the AILD addressed procedural barriers facing individuals harmed by AI systems. While the AI Act establishes ex-ante compliance requirements, the AILD would have provided corresponding ex-post accountability mechanisms (Hacker 2023; Novelli, Taddeo, and Floridi 2023; Ziosi et al. 2023).

[1]In this paper, the following definition applies: *Liability* is the legal obligation of an AI system provider or deployer to compensate for harm caused by the system's operation, encompassing both substantive fault-based duties and procedural mechanisms (e.g., evidence disclosure, burden-of-proof presumptions). This definition clarifies that "liability" includes both the duty to repair harms and the procedural tools enabling claimants to establish those harms.

The Commission's 2025 Work Programme listed the AILD for removal due to "no foreseeable agreement" on the proposal (International Association of Privacy Professionals 2025; Inside Global Tech 2025), despite its rapporteur Axel Voss having published a detailed legislative calendar extending into 2026 just days earlier (Inside Global Tech 2025). Though framed as regulatory simplification, this decision —coinciding with the AI Action Summit in Paris (Reuters 2025)— signals a pivot in EU AI governance affecting innovation, market harmonization, and digital sovereignty (Bradford 2024). This retreat unfolds against mounting concerns about European competitiveness in the global technology landscape. Europe's persistent innovation deficit compared to the US and China stems partly from structural factors that hinder scaling breakthrough innovations across the Single Market (Draghi 2024; Bria, Timmers, and Gernone 2025; Commission 2025). The Draghi Report, released in September 2024, explicitly identified regulatory fragmentation as a critical barrier to European competitiveness (Draghi 2024; TechPolicy.Press 2024). The withdrawal thus embodies tensions in Europe's strategy to balance AI governance with technological leadership in a multi-faceted global scene.

Despite ongoing policy discussions around the AI Liability Directive's withdrawal, a critical research gap remains in understanding its implications. While the decision has been framed as regulatory simplification to enhance competitiveness (European Commission 2025a; Bertuzzi 2025a), little attention has been paid to how fragmentation of liability frameworks might actually create new barriers to innovation across the EU Single Market (European Commission 2023a, 2024). Therefore, this paper addresses the following research question: *How does the withdrawal of the AI Liability Directive impact European technological competitiveness, and what alternative approaches might better serve innovation while ensuring appropriate accountability?*

The question is tackled by examining the directive's context, analyzing fragmentation consequences, and proposing integration pathways for liability frameworks within Europe's digital sovereignty strategy. Through a conceptual policy analysis approach— reviewing the AILD proposal, related EU legislations, reports, and communications on digital sovereignty and competitiveness—it is challenged the equation of regulatory reduction with innovation enhancement (Porter and van der Linde 1995).

It is discussed how eliminating harmonized liability rules may paradoxically increase regulatory complexity by creating a patchwork of national approaches that erect barriers to scaling AI applications across Europe. Beyond diagnosing implications, it is proposed integrating liability considerations into Europe's broader digital strategy, particularly in light of the recently launched AI Continent Action Plan (HPC Wire 2025)—positioning liability frameworks not as impediments but as enablers of innovation by creating the certainty necessary for sustainable AI advancement.

The remainder of this paper is organized as follows[2]. Section examines the background and key provisions of the withdrawn AILD. Section analyzes the political dynamics behind the withdrawal decision. Section explores the central paradox—how regulatory fragmentation creates theoretical barriers to innovation that disproportionately burden EU companies. Section challenges the regulation-versus-innovation dichotomy by demonstrating how well-designed liability frameworks can catalyze rather than hinder technological advancement. Section examines the practical consequences of the resulting fragmented landscape and protection gaps. Section offers policy recommendations for integrating liability considerations into Europe's digital sovereignty strategy. Section acknowledges research limitations before concluding in Section .

The Withdrawn AI Liability Directive: Background and Context

Origins and Key Provisions

The AILD proposal emerged from recognition that traditional liability frameworks were poorly equipped to address the novel challenges posed by AI systems (Machnikowski 2020; Koch 2019). These challenges include information asymmetry between developers and users, the opacity of algorithmic decision-making, and the autonomous nature of advanced AI applications that complicate traditional causation analysis. Carbonara, Guerra, and Parisi (2016) demonstrated effective liability regimes must take into account situations where courts lack full information in order to assign responsibility efficiently (e.g., when care levels, risk, or the value of activities are hard to observe, such as AI contexts where information asymmetries between developers and users are structural, and where black-box decision-making further obstructs causal clarity). The AILD contained several provisions addressing the unique evidentiary challenges associated with AI-related harms:

- Article 3 introduced a targeted evidence disclosure mechanism enabling courts to order defendants to disclose relevant evidence about high-risk AI systems when claimants presented "facts and evidence sufficient to establish the plausibility of the contemplated claim for damages" (Article 3(1)). This provision acknowledged the fundamental information asymmetry in AI cases while including proportional protections for trade secrets and confidential information (Article 3(4)). For defendants who failed to comply with disclosure orders, Article 3(5) created a rebuttable presumption of non-compliance with the duties of care "that the evidence requested was intended to prove," providing an effective enforcement mechanism while still allowing defendants to present contrary evidence.
- Article 4 established a rebuttable presumption of causality applicable under specific conditions, particularly when developers or deployers failed to comply with relevant provisions of the AI Act. For high-risk AI system providers, Article 4(2) enumerated five specific compliance failures that could trigger this presumption, including inadequate data quality (Article 4(2)(a)), insufficient transparency (Article 4(2)(b)), ineffective human oversight (Article 4(2)(c)), inadequate accuracy and cybersecurity (Article 4(2)(d)), and failure to take corrective actions (Article 4(2)(e)). This precision in targeting specific causal links between established fault and AI system output deliberately avoided creating a full reversal of the burden of proof that might have chilled innovation (Li, Faure, and Havu 2022).
- The AILD complemented the revised Product Liability Directive (PLD) (2024/2853) (European Parliament and Council of the European Union 2024a) by addressing non-material harms falling outside the PLD's scope (i.e., discrimination, privacy violations, and personality rights infringements), precisely the novel risks most characteristic of AI systems. This harmonization approach was calibrated through the directive's minimum harmonization provision in Article 1(4), which explicitly allowed Member States to maintain or adopt more claimant-friendly rules while ensuring a baseline of procedural protections across the single market.

Relationship with the AI Act's Compliance Framework

The AILD was intentionally designed to complement the AI Act's ex-ante compliance requirements with corresponding ex-post liability rules (European Parliament and Council of the European Union 2024b; Novelli, Taddeo, and Floridi 2023). While the AI Act establishes detailed requirements for high-risk AI systems in Articles 8-15, including risk management (Article 9), data governance (Article 10), technical documentation (Article 11), record-keeping (Article 12), transparency (Article 13), human oversight (Article 14), and accuracy, robustness and cybersecurity (Article 15), it provides limited mechanisms for redress when these systems cause harm despite compliance efforts. The AI Act's recital 11 explicitly acknowledges this complementary relationship, stating that the regulation "should be without prejudice to the provisions regarding the liability of providers of intermediary services" and that "all rights and remedies provided for by such Union law to consumers... remain unaffected and fully applicable." The AILD would have operationalized this statement by establishing concrete procedures for affected individuals to seek redress when harm occurs.

The AI Act's focus on market surveillance authorities (MSAs) (Articles 74-83) emphasizes public enforcement but

[2] An extended version of this paper with complete appendices is available at https://dx.doi.org/10.2139/ssrn.5370733

provides limited guidance on private enforcement through civil liability claims. While Article 85 establishes a right to lodge complaints with MSAs, this administrative procedure differs significantly from the judicial remedies that would have been strengthened by the AILD through its evidence disclosure mechanisms and presumptions of causality.

Last but not least, these compliance requirements are being operationalized through harmonized European standards. The European Commission's Standardisation Request M/593 (European Commission 2023b) mandates the development of harmonised standards in ten horizontal areas, including risk management, data governance, transparency, and human oversight. Once published in the Official Journal of the EU, these standards will establish a presumption of conformity with the AI Act's requirements. Yet without the AILD's corresponding liability framework, a critical gap emerges between these technical standards and the remedies available when compliant systems nevertheless cause harm.

Political Dynamics Behind the Withdrawal

The "Simplification" Narrative and Institutional Politics

The AILD abandonment occurred amid von der Leyen's second-term pivot from regulatory leadership to business-friendly "simplification" (European Commission 2025a; TechPolicy.Press 2025)—what Wiener (2011) identifies as oscillation between precautionary and risk management approaches.

At the February AI Summit in Paris, newly appointed EVP Virkkunen pledged to "cut red tape and the administrative burden," acknowledging concerns about "too much overlapping regulation" (Bertuzzi 2025b; Reuters 2025). This power realignment created an awkward spectacle: Commissioner Michael McGrath, formally responsible for the AILD portfolio, found himself publicly defending the directive on the very day his colleagues decided to withdraw it, indicating the deregulatory faction's ascendancy within the Commission (Bertuzzi 2025b; Duffourc 2025).

The fate of Axel Voss, the European Parliament's rapporteur for the AILD, further illuminates the political undercurrents at work. On January 21, 2025, merely three weeks before the withdrawal, Voss and his advisor Kai Zenner actively solicited public input on advancing the directive, publishing a detailed legislative calendar extending into 2026 (Inside Global Tech 2025; Bertuzzi 2025b). His response to the withdrawal announcement spoke volumes: "By scrapping the AI Liability Directive, the commission is actively choosing legal uncertainty, corporate power imbalances, and a Wild West approach to AI liability that benefits only Big Tech" (Bertuzzi 2025a; Bird & Bird 2025). Yet within 24 hours, this candid critique vanished from LinkedIn—assumedly under pressure from European People's Party leadership (Bertuzzi 2025a).

This silencing of a senior MEP revealed the enforced deregulatory consensus and tensions between the Commission and Parliament in setting AI policy (Listokin 2008). On April 7, 2025, MEPs Axel Voss and Brando Benifei co-authored a letter to the Commission warning that shelving the Directive risks undermining the coherence of the EU's broader AI strategy. They recalled that key safeguards were negotiated out of the AI Act on the promise that the AILD would cover them, and urged that an updated liability proposal be included in the upcoming Digital Omnibus Package (BEUC 2025). Just two days later, at the JURI Committee hearing on April 9, 2025, Voss stressed that "simplification is a trend, but liability rules are needed anyway to create a true digital single market" (Kroet 2025). He further emphasized the AILD to provide the necessary *ex post* liability mechanism to redress harms not covered by the AI Act's preventive focus (of Privacy Professionals 2025).

Member State Opposition and Council Dynamics

While the Commission's withdrawal decision was unexpected, it built upon growing skepticism in the EU Council.

The disclosure mechanism (Art.3) proved particularly contentious among Member States. When the Hungarian Council Presidency circulated a questionnaire on the directive, evidence disclosure was highlighted as having "raised the most discussions" due to fundamental differences in national legal systems (Bertuzzi 2024a). Several countries, including Italy, Belgium, Austria, and Lithuania, noted they lacked comparable preliminary evidence disclosure mechanisms, complicating harmonization efforts. France emerged as the leader of this opposition, consistently questioning whether the AILD was necessary given existing national liability regimes. By October 2024, France was explicitly stating that the proposal "does not seem justified" and might "do more harm than good." Belgium, Czechia, and Austria joined in expressing reservations, suggesting the directive's complexity would undermine legal certainty rather than enhance it (Bertuzzi 2024b). Even member states more supportive of the directive's general aims, i.e., Croatia, the Netherlands, and Sweden, criticized its excessive complexity. The Netherlands suggested concrete case workshops to better understand practical applications, while Czechia pointedly noted the absence of actual judicial cases demonstrating the need for new legislation.

This opposition in the Council created the political space for the Commission to withdraw the proposal (Scharpf 2006; Genschel and Jachtenfuchs 2018). The decision also aligned with the Commission's broader policy direction outlined in their Better Regulation Guidelines, which emphasize proportionality and efficiency in regulatory interventions (European Commission 2021b,a). Support emerged within Parliament as well, with the IMCO Committee's draft opinion of January 2025 recommending rejection on grounds of regulatory overlap (European Parliament 2025). As of May 2025[3], the European Parliament's Committee on Internal Market and Consumer Protection (IMCO) voted to continue working on the rules despite the Commission's withdrawal, cre-

[3]The withdrawal follows specific procedural steps. According to the EU's inter-institutional arrangements, the Commission had to sent "a formal communication to the European Parliament and Council of the EU" and "the two institutions will have six months to say whether they want to continue working on the AI Liability Directive" (Bertuzzi 2025c), yet the path to resurrection appears narrow given the political headwinds.

ating further institutional tension (PYMNTS 2025). Yet the Parliament's Legal Affairs committee (JURI), which holds primary responsibility for the file, has not yet decided on its course of action, illustrating the continued political uncertainty surrounding AI liability in Europe (PYMNTS 2025). Nevertheless, the political dynamics behind the withdrawal have been subject to extensive analysis. A comprehensive study commissioned by the European Parliament's JURI Committee in July 2025 (Bertolini 2025) traced the evolution from the Commission's original two-pillar approach (PLD and AILD) to the current fragmented landscape, confirming our analysis that the withdrawal represents a "complete reversal" from the original regulatory strategy that prioritized civil liability rules.

Geopolitical Context and External Pressures

The geopolitical context of the AILD withdrawal becomes more significant when viewed alongside the specific requirements in the AI Act that would have triggered liability under the directive. The previous European Commission had pursued tech regulation with confidence, operating in a cooperative international environment under the Biden administration. The new landscape created very different external pressures, with the withdrawal timing coinciding with the AI Action Summit in Paris—suggesting a deliberate recalibration of EU tech policy to align more closely with American priorities. At the Summit on February 11, 2025, US Vice President JD Vance delivered a speech denouncing further regulation that could hamper AI technology's growth, declaring that "this administration will ensure that American AI technology continues to be the gold standard worldwide" (TechPolicy.Press 2025).

This rhetoric from the new US administration presented a stark contrast to previous US-EU alignment on AI governance principles. This raised fundamental questions about European regulatory autonomy. While EU officials publicly rejected the notion that they were capitulating to American pressure, the rapid pivot away from ambitious regulation toward a more permissive approach aligned with U.S. preferences suggested otherwise (National Telecommunications and Information Administration 2023). Recent figures highlight a growing gap in AI investment: in 2023, the US saw approximately $67 billion in private AI investment compared to just $8 billion in Europe (McKinsey Global Institute 2024c,d; European Innovation Council and SMEs Executive Agency 2024a).

This investment gap has become a central justification for regulatory retreat, with competing narratives about EU tech regulation. The official narrative from the Commission emphasizes simplification and reducing regulatory burden to foster innovation and competitiveness. The counter-narrative, expressed by Voss before his post was removed, sees the withdrawal as creating legal uncertainty and fragmentation. Rather than simplifying the regulatory landscape, it leaves 27 different national liability regimes to handle AI-related harms not covered by the PLD. These competing interpretations reflect disagreements over the relationship between European regulation and innovation (Vogel 2018).

The Paradox: How Regulatory Fragmentation May Harm Innovation

The Fragmentation Fallacy

The AILD withdrawal creates a significant paradox in EU innovation policy. While presented as a deregulatory move to boost competitiveness, it actually reinforces one of the most persistent barriers to European technological advancement: *market fragmentation*. Without the harmonized procedural rules proposed in Articles 3 and 4 of the AILD, businesses operating across the EU now face a complex patchwork of 27 different national liability regimes with varying approaches to evidence disclosure, burden of proof, and causation requirements. Especially for small & medium-sized enterprises (SMEs) lacking extensive legal resources, the AILD's minimum harmonization approach, explicitly stated in Article 1(4), would have allowed Member States to maintain or adopt more claimant-friendly rules while ensuring a baseline of procedural protections across the UE market.

This fragmentation exemplifies the EU 'integration paradox' where simplification efforts increase complexity through national divergence (Genschel and Jachtenfuchs 2018; Hooghe and Marks 2001). A 2020 study required by the European Parliament confirmed that varying liability regimes lead companies to develop different products for different jurisdictions (Bertolini 2020), with the 2025 JURI study warning how this creates "that very form of over-regulation that European policymakers aim to avoid" (Bertolini 2025).

The Draghi Report identified such regulatory fragmentation as a critical barrier to innovation and scaling, where companies "fall victim to multiple regulatory, legal, and bureaucratic barriers" that prevent them from achieving scale (Draghi 2024; European Law Blog 2025). The report explicitly states that "the EU's regulatory stance towards tech companies hampers innovation," noting that "the EU now has around 100 tech-focused laws and over 270 regulators active in digital networks across all Member States" (TechPolicy.Press 2024). This fragmentation creates scaling challenges for innovative startups across the EU market.

The revised PLD does establish a harmonized approach to AI products across Member States in Article 3, which explicitly states that "Member States shall not maintain or introduce, in their national law, provisions diverging from those laid down in this Directive." Nevertheless, this harmonization is limited to substantive liability for product defects rather than the procedural aspects that the AILD would have addressed. This creates the paradoxical situation where the more traditional aspects of liability are harmonized while the most novel and challenging aspects of AI liability remain fragmented across national legal systems (Duffourc and Gerke 2023; Ebers, Janssen, and Meyer 2009).

This situation illustrates what might be termed the "fragmentation fallacy" i.e., the belief that fewer EU-level rules necessarily means less regulatory burden. The European Commission itself has acknowledged this problem in its response to the Draghi Report, highlighting the need to tackle "scaling up challenges caused by regulatory and legal fragmentation" (European Law Blog 2025). Recent analysis

supports this observation, noting that the EU's "legislative maze, comprising in early 2025 exactly 101 adopted digital laws, has often constrained growth, especially for European SMEs that face disproportionate compliance costs" (Zenner et al. 2025). In reality, the absence of harmonization often creates a complex legal environment as companies must navigate multiple national frameworks instead of a single European one (Bertolini 2020; Kullas 2024).

The Information Asymmetry Problem

The AILD's targeted evidence disclosure mechanism aimed to address what Li, Faure, and Havu (2022) identify as a critical market failure in AI governance: information asymmetry. From a law and economics perspective, they argue that when information about AI systems is unequally distributed between developers and users, liability rules must be carefully crafted to create appropriate incentives for risk reduction. A harmonized approach to evidence disclosure – one of the AILD's core provisions in Article 3 – would have addressed this fundamental market failure in AI between developers and users. Without harmonized disclosure mechanisms, this information asymmetry persists and varies by jurisdiction, creating several negative consequences for innovation:

- *Misallocated Liability:* When information barriers prevent legitimate claims, the costs of AI harms are not properly internalized by developers and deployers, leading to misaligned incentives for safety investments.
- *Erosion of Trust:* Inability to effectively seek redress for AI-related harms undermines public trust in AI systems, potentially slowing adoption across sectors.
- *Reactive National Regulation:* As AI-related incidents occur, member states may introduce reactive, fragmented, and potentially more stringent national liability rules, creating greater regulatory divergence over time.

Scaling Barriers in the European Market

For European AI companies seeking to scale, fragmented liability regimes present particularly significant challenges. To achieve the scale necessary to compete globally, European startups must expand across multiple member states, each with its own approach to non-contractual liability (Kelemen 2011; Atomico 2023). This could scale to:

- *Increased Transaction Costs:* Companies must invest in legal expertise for each jurisdiction, conducting country-specific risk assessments that divert resources from product development and innovation.
- *Risk Aversion:* Uncertain liability exposure across markets encourages excessive caution, potentially hampering more ambitious or novel AI applications.
- *Market Entry Barriers:* For resource-constrained startups, the costs of assessing liability risks across multiple jurisdictions may render certain markets effectively inaccessible, limiting growth potential.

The Draghi Report provides compelling evidence for these scaling barriers, noting that between 2008 and 2021, approximately 30 percent of European "unicorns" (startups valued over $1 billion) relocated to the United States (TechPolicy.Press 2024; Center for Data Innovation 2024). The report explicitly attributes this exodus to "regulatory, financial, and training barriers" that make expanding in the US market more rewarding than tackling fragmented EU markets (Center for Strategic and International Studies 2024).

These scaling barriers disproportionately affect European companies, which typically begin with a domestic focus before attempting cross-border expansion. American and Chinese competitors, by contrast, benefit from large, unified home markets that allow them to achieve scale before confronting international regulatory fragmentation (Simons, Turrini, and Vivian 2024; Zenner et al. 2025). As Draghi (2024) notes, the "fragmented Single Market reduces competitiveness, driving high-growth companies overseas and limiting capital market development" (Herbert Smith Freehills 2024).

Comparative Disadvantage for EU Companies

Contrary to the simplification narrative, the absence of harmonized liability rules may actually disadvantage European AI companies compared to their American and Chinese counterparts. Large non-EU tech companies possess structural advantages (Draghi 2024; Bradford 2024) in navigating regulatory fragmentation:

- *Legal Resource Asymmetry:* Global tech giants maintain sophisticated legal departments with expertise across multiple jurisdictions, turning regulatory complexity into a competitive moat against smaller challengers (Xu 2025).
- *Scale Benefits:* Large non-EU tech firms can amortize compliance costs across a larger revenue base. Research shows that U.S. tech companies are significantly more profitable with "a 7 percentage point difference in average profit margins between high and mid-tech companies in the U.S., compared to only 3 percentage points in the EU" (European Innovation Council and SMEs Executive Agency 2024b).
- *Strategic Jurisdiction Selection:* Without harmonized rules, non-EU companies can strategically select entry points to the European market based on favorable liability regimes, while EU companies must comply with their home country rules from inception.

This creates a paradoxical outcome where deregulation at the EU level potentially reinforces the market dominance of established tech giants rather than fostering European innovation (Centre for European Policy Studies 2023). The Draghi Report acknowledges this dynamic, noting that "many innovative companies end up seeking out financing from US venture capitalists and see expanding in the large US market as a more rewarding option than tackling fragmented EU markets" (TechPolicy.Press 2024). As Voss noted before his post was removed, "The 'Wild West' approach to AI liability benefits only Big Tech" (Bird & Bird 2025), since regulatory complexity and unpredictability favor those with the greatest resources to navigate it.

Empirical Evidence of Fragmentation Costs

The economic toll of regulatory fragmentation extends beyond theoretical concerns. Europe's innovation deficit derives from structural factors that hinder scaling breakthrough innovations across the Single Market (Draghi 2024; Bria, Timmers, and Gernone 2025; Commission 2025). Regulatory fragmentation within the EU has been estimated to reduce GDP by 5-10% in total (Comerford and Rodríguez Mora 2019; McKinsey Global Institute 2024a; European Stability Mechanism 2023), with SMEs facing compliance costs 40% higher relative to turnover compared to large firms—2.5% versus 1.8% respectively (European Parliament 2024).

Comprehensive studies of GDPR implementation provide a preview of costs awaiting fragmented AI liability regimes. MIT research demonstrates GDPR reduced EU company profits by 8.1% on average, with small firms experiencing disproportionate impacts of 8.5% profit decline (Johnson, Shriver, and Goldberg 2024). This functions as a 25% tax on smaller companies, consuming resources that would otherwise fund innovation activities. Medical Device Regulation compounds this burden, requiring investments of €50,000 to €500,000 for clinical trials alone, representing 5-10% of revenue for typical companies (EuroDev 2024). Corporate surveys quantify absolute GDPR compliance costs at $1.7 million to $70 million per company, with 88% of global companies spending over $1 million to maintain compliance annually (IT Pro 2024). For major US technology companies navigating fragmented EU member state implementations, average annual compliance costs reach $430 million per company (Computer & Communications Industry Association 2025).

Tax compliance costs doubled between 2014-2019, reaching 1.9% of company turnover, directly attributed to member states' "gold-plating"[4] practices that create additional requirements beyond EU directives (European Parliament 2024). This empirical evidence demonstrates how fragmentation functions as an innovation tax, particularly penalizing the SMEs that represent 99.8% of EU enterprises.

The Constructive Role of Liability Rules in Innovation

Far from impeding technological advancement, well-designed liability frameworks can actively catalyze innovation by creating market certainty, building consumer trust, and establishing clear rules of engagement. This section challenges the fundamental misunderstanding that underlies the AILD withdrawal, i.e., the dichotomy between regulation and innovation (Porter and van der Linde 1995; Wansley 2021; Tartaro, Smith, and Shaw 2023; Zhang et al. 2024). We demonstrate how liability rules can function as market-oriented alternatives to prescriptive regulation, establish the trust necessary for widespread AI adoption, create positive incentives for safety and quality, and offer historical evidence of liability frameworks driving rather than hindering innovation across multiple sectors.

Liability as a Market-Oriented Alternative to Prescriptive Regulation

The withdrawal of the AILD reflects a profound misreading of the relationship between liability rules and innovation. The economic foundations for viewing liability as a market-oriented regulatory tool are well-established. Shavell (2009) demonstrates that well-designed liability rules create incentives for optimal care and activity levels without prescribing specific technological solutions, allowing innovators to determine the most efficient risk management methods while ensuring failure costs are properly internalized. In the AI context, this flexibility is particularly valuable given the technology's rapid evolution.

The AI Act's approach to high-risk AI systems illustrates both the necessity and limitations of compliance-focused frameworks without corresponding liability mechanisms. Article 16 imposes twelve distinct obligations on providers, from ensuring risk management compliance (Article 9) to establishing post-market monitoring systems. The AILD would have transformed these detailed obligations into a workable accountability framework by establishing causation presumptions (Article 4) when non-compliance led to demonstrable harm. The AI Act's conformity assessment procedures (Articles 43-44) ensure pre-market compliance but offer minimal guidance on post-market accountability when certified systems cause harm. The AILD would have filled this critical gap by creating liability consequences for such systems, incentivizing ongoing vigilance rather than treating certification as a one-time regulatory hurdle[5].

Unlike the AI Act's detailed safety requirements, the AILD's liability rules would have established consequences for harm without dictating specific technical approaches or design choices. This flexibility for innovators reflects how well-designed regulatory frameworks can work alongside standards to enable rather than restrict innovation (Tartaro, Smith, and Shaw 2023). Further, it reflected the AILD's market-oriented approach in several key ways:

- Article 4 ingeniously linked liability presumptions to existing obligations under the AI Act rather than creating new substantive requirements. The presumption of causality would apply only when providers failed to meet specific obligations under the AI Act, such as ensuring data quality, transparency, human oversight, accuracy, robustness and cybersecurity—all elements that reduce risk and foster trust in AI systems.
- The directive explicitly preserved adaptability through its staged approach under Article 5, which called for review after five years to assess whether additional measures would be necessary. This signaled a commitment

[4]Gold-plating refers to the practice whereby Member States impose additional requirements beyond those set out in EU directives when transposing them into national law, creating unnecessary regulatory burdens and market fragmentation (Král 2021).

[5]Unlike other EU product safety legislation that combines both safety requirements and liability frameworks, the AI Act focuses almost exclusively on the former while deferring the latter. This separation departs from the integrated approach proven effective in other domains.

to evolving liability frameworks based on market experience rather than imposing rigid rules from the outset.

- Article 4(4) provided an exemption from the presumption of causality when "sufficient evidence and expertise is reasonably accessible for the claimant," creating an incentive for providers to enhance transparency and explainability at large but also enhancing Article 86's impact (Rudin 2019; Nannini et al. 2024; Nannini 2024).

Historical Precedents and Trust Foundations: Liability as Innovation Catalyst

Precedents across multiple sectors suggests that well-designed liability frameworks can facilitate rather than impede innovation through establishing predictable rules, reducing uncertainty, and creating incentives for quality and safety improvements. Rather than assuming a strictly antagonistic relationship between liability and innovation, research increasingly supports a more nuanced understanding of their interaction.

This interplay between regulation and innovation is more explicitly theorized in the Porter Hypothesis, which argues that properly designed regulatory standards can trigger innovation that may partially or fully offset compliance costs (Porter and van der Linde 1995). In their seminal work, Porter and van der Linde challenged the conventional view that environmental regulation necessarily impairs competitiveness, demonstrating how well-crafted standards can improve resource productivity and stimulate technological advancement (Tartaro, Smith, and Shaw 2023). Evidence supporting particularly the "weak version" of this hypothesis—that regulation can stimulate innovation—has accumulated over time, although findings on competitive advantage remain mixed (Ambec et al. 2013).

The empirical relationship between liability and innovation is nuanced and often depends on calibration (National Academy of Engineering 1994), thus revealing that regulatory design matters more than regulatory quantity. Viscusi and Moore (1993) found that at low to moderate levels of expected liability costs, there is a positive effect on product innovation, while at very high levels, innovation may be suppressed. Their research indicates that calibrated liability regimes can increase R&D intensity by approximately 15% at optimal levels. Recent meta-analysis of 58 studies confirms the Porter Hypothesis with a positive effect size of 0.10 ($p \leq 0.001$), demonstrating that environmental regulation stimulates innovation rather than hindering it (Zhang et al. 2024). Command-and-control regulation with flexibility mechanisms shows the strongest positive effects when implemented consistently across unified markets.

In the pharmaceutical sector, the relationship between liability frameworks and innovation is similarly complex. Research by Garber (2013) demonstrates that pharmaceutical liability systems create both incentives for safety-enhancing innovation and potential barriers to product development, depending on their design and implementation. More recent research by Galasso and Luo (2024) on medical devices shows that product liability litigation affects both the rate and direction of technological progress, with evidence that litigation can induce firms to develop safer devices while reducing the introduction of certain product categories. Similarly, the automotive industry provides an instructive case study of the complex relationship between regulatory frameworks, liability, and innovation. Companies like Volvo developed systematic approaches to safety research and innovation that were partially responsive to evolving liability standards (Akamatsu, Green, and Bengler 2013).

The EuroStack initiative echoes these views, arguing that "well-designed regulation can foster rather than hinder innovation by creating market certainty, building consumer trust, and providing clear rules of engagement" (Bria, Timmers, and Gernone 2025). Similarly, the European Investment Bank's 2024/2025 Report demonstrates that "in countries with stricter climate policies, firms are 7 percentage points more likely to be energy efficiency leaders" while firms in areas with weaker regulatory frameworks show no such advantage (European Investment Bank 2025). This suggests that clear liability structures similarly provide innovation incentives by offering market certainty.

Implications: A Patchwork of Protections

These patterns suggest that the AILD's withdrawal may have contradictory effects on AI innovation. Well-calibrated liability frameworks tend to create certainty and build trust in emerging technologies—both critical factors for widespread AI adoption[6] and sustainable market growth. Rather than assuming that deregulation will automatically enhance innovation, policymakers should consider how appropriately designed liability rules might function as enabling infrastructure for responsible AI development by clarifying rights, responsibilities, and recourse mechanisms when harms occur.

The Emerging EU Liability Landscape for AI

The withdrawal of the AILD has created a complex, fragmented landscape for addressing AI-related harms across the European Union. Rather than a single, coherent framework, we now have a three-tiered system of overlapping and incomplete protections.

1. The AI Act establishes ex-ante safety requirements primarily for high-risk AI systems and general-purpose AI models. While it creates compliance obligations, it does not directly address liability when harms occur. National courts will interpret how AI Act requirements influence liability determinations without harmonized guidance.
2. The PLD, even if recently revised to explicitly include software and AI systems, establishes strict liability for defective products that cause physical harm, damage to consumer property, or data corruption (Duffourc and

[6]Over trust for AI adoption: as Bertolini (2020) observed in their analysis of effective liability frameworks, "[l]egal certainty and effective legal protection increase users' trust and willingness to purchase more innovative goods." This trust is relevant for emerging technologies and is "achieved when victims are aware that they will always obtain compensation if they are entitled to it" (Bertolini 2020). By contrast, fragmented liability regimes create uncertainty that can significantly delay technology uptake and reduce European competitiveness in the global AI landscape.

Gerke 2023; Koch 2019). As Niehoff (2025) explains that even if manufacturers or providers of defective AI systems are liable without fault (if there is a product defect), nevertheless the draft AILD would have covered "non-contractual fault-based liability, in case of a breach of a duty of care, for any type of damage (including pure financial losses and non-material damages)."

3. Finally, for harms not covered by the PLD – including discrimination, privacy violations, reputational damage, and other non-material impacts – affected parties must rely on 27 different national liability frameworks with varying approaches to fault determination, evidence requirements, burden of proof, and available remedies.

The resulting landscape is more complex than a simple reversion to national law. Rimkute (2025) challenges the assumption that without the AILD, AI liability would be governed solely by national law, arguing that the EU principle of effectiveness –due to EU tort law (Oliphant 2009; Giliker 2018)– will continue to influence how courts resolve AI liability disputes, particularly in cases involving breaches of the AI Act. Thus similar outcomes to those intended by the AILD may emerge through judicial interpretation, but with significant inconsistency across jurisdictions.

Substantive Protection Gaps The current fragmented approach leaves critical protection gaps that the AILD would have addressed (Price 2017). Without harmonized procedures, several categories of AI-specific harms face particularly inconsistent treatment across national jurisdictions.

Algorithmic discrimination presents a significant challenge when AI systems produce biased outcomes in hiring, lending, or service access, as affected individuals now face wildly divergent remedies[7] depending on their member state (Smuha 2021). Equally problematic are opacity challenges stemming from the "black box" nature of many AI systems, which create substantial evidentiary barriers (Nannini et al. 2024; Nannini 2024); without the AILD's harmonized evidence disclosure mechanisms, plaintiffs in jurisdictions with limited discovery procedures face obstacles in proving their cases (Babic et al. 2021). Personality rights violations also receive inconsistent protection as AI systems generate increasingly sophisticated content that may be defamatory, create deepfakes, or otherwise violate fundamental rights, with existing national frameworks struggling to adapt cohesively (Gordon 2020). Finally, collective harms (where AI-related damages affect large groups simultaneously rather than individuals intensely) represent a pattern that traditional liability frameworks often struggle to address effectively.

These gaps disproportionately affect precisely the novel, non-material harms most characteristic of advanced AI systems, creating the paradoxical situation where the most AI-specific risks receive the least harmonized legal protection (Brandstätter 2024).

Compliance Costs Navigating 27 liability regimes creates operational challenges disproportionately impacting European businesses scaling across the Single Market (Draghi 2024; Commission 2025). Companies face unpredictable liability exposure across jurisdictions, complicating risk assessment and insurance provisioning. Documentation requirements multiply as firms track varying technical information needs per member state. Contradictory liability exposures create inconsistent safety incentives, undermining unified product development (European Investment Bank 2023). Providers must comply with harmonized Article 40 standards (European Commission 2023b) while navigating 27 national liability approaches when compliant systems cause harm. Resource-constrained startups face particular scaling barriers navigating this complexity (European Commission 2015).

This for providers. For the EU market competitiveness at large, quantitative evidence projects €500 billion to €1 trillion in annual competitiveness losses by 2030 if regulatory fragmentation remains unaddressed (Draghi 2024; McKinsey Global Institute 2024b). As of Q3 2024, the US accounted for nearly 68% of global AI funding, capturing $11.4B out of a total $16.8B, while Europe lagged with a 17% share ($2.8B) (CB Insights 2024). The disparity is echoed in deal count, with US firms closing 566 funding rounds compared to Europe's 279. Moreover, the US dominated mega-round activity ($5.9B) compared to EU ($1.2B) or Asia ($1.3B). These dynamics culminate in the US hosting 150 of the world's AI unicorns (more than five times the rest of the world combined) while Europe holds just a handful (32). Further considering that in 2024 China alone had 61% of AI patents versus Europe's 2% (The Rapacke Law Group 2025), these figures underscore how the deep structural innovation gap in capital formation and scale directly correlates with regulatory certainty differentials.

Recommendations for Moving Forward

The AILD withdrawal creates a critical opportunity to reassess how liability frameworks should be integrated into Europe's broader digital sovereignty strategy. As illustrated in Figure 1, the current fragmented landscape creates substantive protection gaps and compliance complexities that a more targeted approach can address.

Integrating Liability Frameworks into the Digital Sovereignty Vision

Future liability proposals should be explicitly positioned as enabling rather than restricting components of this digital sovereignty vision, developed in parallel with investment initiatives rather than as separate regulatory exercises.

This integration must now also account for the recently announced AI Continent Action Plan of April 2025, which aims to make Europe a global leader in AI by developing trustworthy technologies that enhance competitiveness while safeguarding democratic values (European Com-

[7] Evidence from the European Commission for the Efficiency of Justice (European Commission for the Efficiency of Justice 2024) quantifies this disparity: court processing times vary from 344 days for criminal cases to 741 days for administrative cases across EU states, with some jurisdictions taking over 1,000 days for complex liability claims. This variation creates forum shopping opportunities, as demonstrated in German patent courts where plaintiffs select among three dominant courts based on processing efficiency and success rates (Lehmann-Hasemeyer and Morell 2025).

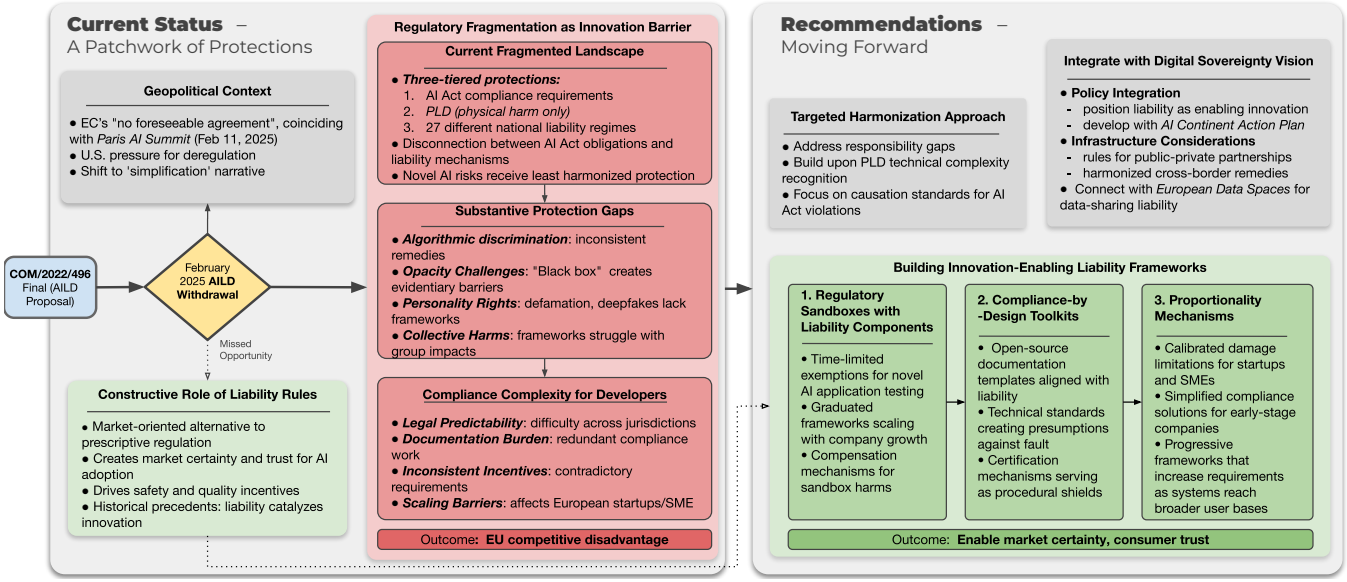

Figure 1: Current fragmented liability landscape (left) versus recommended integrated approaches (right).

mission 2025c). As stated by Executive Vice-President Virkkunen, "Artificial intelligence is at the heart of making Europe more competitive, secure and technologically sovereign. The global race for AI is far from over" (HPC Wire 2025). The EuroStack initiative—proposing €300 billion in investments over a decade to develop sovereign European digital infrastructure—represents an ambitious vision aligned to such technological autonomy, but its success depends on coherent governance frameworks that build trust and certainty (Bria, Timmers, and Gernone 2025).

Holistic Policy Integration Future liability frameworks must be strategically integrated with Europe's broader digital sovereignty initiatives to create a coherent governance ecosystem. Future liability frameworks must integrate with digital sovereignty initiatives by: developing mechanisms alongside AI Factories (€1.5 billion committed) (European Commission 2025c); supporting AI Continent Action Plan sectors; and providing SME-friendly compliance guidance to prevent regulatory burdens, as reported by (Draghi 2024).

European Data Spaces Connection The proposed European data spaces initiative under both EuroStack and the AI Continent Action Plan requires corresponding liability frameworks for data-sharing ecosystems (HPC Wire 2025). This includes harmonized rules for allocating responsibility when shared data contributes to AI-related harms, an issue Carbonara, Guerra, and Parisi (2016) identifies as central to addressing information asymmetries in complex technological systems. On top of that, these frameworks shall establish balanced approaches that encourage rather than discourage data sharing for innovation, particularly in sectors like health, mobility, and energy where European Investment Bank (2023) notes liability concerns may otherwise impede crucial data collaboration.

Targeted Harmonization: A Focused Alternative to the AILD

Any targeted approach to liability harmonization must address what Santoni de Sio and Mecacci (2021) identify as four distinct 'responsibility gaps' in AI systems: the agency gap, the responsibility distribution gap, the knowledge gap, and the monitoring gap. Their analysis suggests that different aspects of these gaps require different solutions—from technical standards to liability frameworks to ethical guidelines. Therefore, rather than abandoning harmonization entirely, EU policymakers should consider a more targeted approach focusing on specific aspects of AI liability where fragmentation creates the greatest barriers to both innovation and protection. This approach aligns with Ellul et al.'s framework that provides for "voluntary regulation where sought, and mandatory where required" (Ellul et al. 2021), striking a balance that both ensures appropriate oversight and supports innovation.

One promising approach would be to build upon the PLD's recognition of technical complexity by developing an AI-specific interpretation of what constitutes "excessive difficulties" in the AI context. This to establish specific criteria for applying this presumption to different categories of AI systems, providing greater consistency across member states while leveraging the existing legal framework (Geistfeld 2011). Hacker (2023)'s distinction between "illegitimate-harm" and "legitimate-harm" AI systems offers a valuable framework for calibrating liability standards. In simpler terms, a targeted directive could establish that non-compliance with those requirements/standards creates a rebuttable presumption of causation when harm occurs in areas directly related to them.

Last but not least, given that the AI Act already establishes a reporting framework for "serious incidents," a targeted directive could focus specifically on procedural harmoniza-

tion for liability claims arising from these reported incidents. This approach aligns with what Fenwick, Vermeulen, and Corrales (2018) defines as "dynamic regulation," responding to changing industry practices through feedback effects and enhanced information for regulation. This should strengthen the compliance framework's incident reporting and corresponding liability proceedings, while limiting harmonization to the most severe cases where the need for Union-wide consistency is most compelling (Falco et al. 2021).

Towards Innovation-Enabling Liability

Well-designed liability rules catalyze rather than constrain innovation (Porter and van der Linde 1995; Wansley 2021). Following Ellul et al.'s framework of avoiding blanket mandates while maintaining sector-specific oversight (Ellul et al. 2021), three mechanisms merit consideration:

1. *Regulatory sandboxes* with liability components create experimentation spaces. Fenwick, Vermeulen, and Corrales (2018) shows sandboxes attract investment; Draghi (2024) recommends harmonizing "national 'AI Sandbox regimes' across Member States" (European Commission 2025b). These include time-limited exemptions, graduated frameworks scaling with growth, and structured compensation for sandbox harms (Financial Conduct Authority 2023).
2. *Compliance-by-design toolkits* reduce SME burdens—over half cite regulatory obstacles as their primary challenge (Benizri 2025). Toolkits provide open-source templates, technical standards creating fault presumptions, and certification shields (Tartaro, Smith, and Shaw 2023; Mökander 2023).
3. *Proportionality mechanisms* scale liability with company size and risk. The Draghi Report's recommendation for providing public "computing capital" to SMEs (European Commission 2025b) acknowledges disproportionate regulatory impacts. Mechanisms include calibrated damage limits for low-risk startups, simplified early-stage pathways, and progressive requirements matching user reach (Faure 2004).

European Investment Bank (2025) demonstrates firms under clear climate policies show higher investment, profitability, and innovation—evidence that regulatory clarity drives competitive advantage. The Parliament's July 2025 assessment deemed strict liability for high-risk AI systems the "optimal solution" for harmonization, efficiency, and protection (Bertolini 2025).

Limitations and Future Research

This manuscript adopts a conceptual policy analysis approach necessitated by the recency of the AI Liability Directive withdrawal in February 2025. Given the novelty of these developments and the absence of established academic literature on this specific policy shift, we synthesized primary sources including official EU communications, report, and communications, and institutional analyses to establish an authoritative foundation for our examination.

While this approach enables timely analysis of emerging regulatory dynamics, we acknowledge several limitations. The recent nature of these developments constrains our ability to comprehensively assess long-term market impacts, though our conceptual framework identifies critical areas requiring attention. On this line, our analysis provides a foundation for understanding potential economic effects of regulatory fragmentation, which future quantitative studies can build upon to measure precise impacts on European AI competitiveness. In particular, research should extend this work through multiple complementary approaches:

1. *Quantitative Economic Analysis*: Future studies should employ difference-in-differences methodologies to compare innovation metrics in EU member states with varying liability frameworks post-AILD withdrawal. Key variables could include: (1) AI startup formation rates, (2) venture capital investment flows, (3) patent application intensity, and (4) cross-border scaling success rates.
2. *Empirical Legal Studies*: Systematic analysis of AI-related litigation patterns across EU member states can quantify forum shopping behaviors and remedy inconsistencies. Researchers should collect data on: (1) case filing distributions, (2) judgment variations for similar harms, (3) evidence standards applied, and (4) damage award disparities.
3. *Stakeholder Impact Assessment*: Large-scale surveys and structured interviews with AI developers, legal departments, and affected individuals can capture lived experiences of fragmentation. Key research questions include: How do companies allocate resources between compliance and R&D under fragmented regimes? What specific liability uncertainties deter market entry? How do remedy variations affect public trust in AI systems?
4. *Comparative Institutional Analysis*: Cross-jurisdictional studies comparing EU fragmentation with unified liability frameworks in the US, China, and other markets can identify best practices. Particular attention should focus on how different institutional designs balance innovation incentives with accountability mechanisms.

Conclusion

The AILD withdrawal paradoxically creates more complexity through fragmentation, not less. While "cutting red tape" appeals superficially, fragmented frameworks disproportionately burden European companies scaling across the single market. Evidence demonstrates harmonized frameworks drive innovation (Porter and van der Linde 1995; Bertolini 2020; Bradford 2024; European Investment Bank 2025; Zenner et al. 2025). The Draghi (2024) recommendation to facilitate "inventors becoming investors" is undermined by fragmentation. Positioning liability as enabling trust and certainty, Europe can develop AI governance supporting both competitiveness and welfare. Any reconsideration should integrate with AI Act provisions, creating the predictable environment essential to EU AI innovation.

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