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Automation of Legal Processes: From Contract Standardization to Digital Justice

[1]Ferents Filip
[1]Expert in Consumer Rights Protection and the Application of Artificial Intelligence in Legal Processes
Founder of an AI-powered platform designed to protect consumer rights and automate legal processes in the U.S. home services and digital services industries, Williamsburg, Va USA

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Abstract

The article analyzes the impact of automation on the transformation of the legal sector, tracing the trajectory from the unification of contracting practices to the institutionalization of digital justice. The aim of the study is to determine how the introduction of artificial intelligence (AI) technologies and contract lifecycle management (CLM) systems reduces the frequency of disputes and strengthens trust in the legal services market. The methodological framework includes a systematic review of academic sources, content analysis of industry reports, and a comparative analysis of empirical cases. The results obtained demonstrate that the standardization and automation of contracting directly diminish legal uncertainty — a key trigger of commercial conflicts — shortening document-processing times by up to 80% and increasing the accuracy of risk identification. In parallel, online dispute resolution (ODR) platforms provide efficient and predictable procedures for the settlement of residual disagreements, which indirectly raises the level of market trust. The conclusions drawn confirm the hypothesis that end-to-end automation of legal processes forms a more resilient and transparent legal environment. The materials are addressed to legal practitioners, researchers at the intersection of law and technology, developers of LegalTech solutions, and regulators.

Keywords: automation of legal processes, LegalTech, contract standardization, contract lifecycle management (CLM), digital justice, online dispute resolution (ODR), artificial intelligence in law, dispute reduction, market trust, algorithmic bias.

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1. Introduction

The legal domain is entering a phase of profound structural transformation, determined by accelerating digitalization. By 2025, artificial intelligence is regarded as a foundational component of legal practice rather than an auxiliary overlay [1]. This is mirrored by the economic dynamics: the size of the global LegalTech market in 2024 is estimated at 31,59 billion US dollars with a projected increase to 63,59 billion by 2032, which implies a compound annual growth rate (CAGR) of 9,4% [2]; alternative estimates record a comparable trajectory — a CAGR of 10,2% through 2030 [3]. The adoption trajectory is also characterized by exponential acceleration: whereas in 2023, 55% of the top one hundred law firms were testing or deploying generative AI, in 2024 this figure approached 90% [4]. According to Deloitte, by 2025, 79% of practicing lawyers will actively use AI-based tools [1]. Taken together, these indicators demonstrate that automation is not a cyclical trend but a systemic shift that redefines the paradigm of legal service delivery.

At the same time, despite intensive study of individual

LegalTech segments, a significant gap remains in the scholarly discourse: there is no holistic analysis of the interrelation between preventive and dispute-resolution mechanisms of automation. Research attention is usually polarized — either on improving the efficiency of transactional procedures or on tools for resolving conflicts that have already arisen. Meanwhile, it is precisely their synergy that forms an integrated ecosystem capable of radically changing the dynamics of disputes in commercial turnover. The research problem centers on the paradoxical effect of automation: on the one hand, reducing the costs of preparing comprehensive and clear contractual terms should diminish the frequency of conflicts (contract effect), on the other hand, making the dispute process itself cheaper potentially encourages more frequent resort to courts (litigation effect) [5].

1.1. The purpose of this study is to determine how the automation of legal procedures, from the standardization of contracts to the implementation of digital justice, contributes to a reduction in the frequency of disputes while simultaneously strengthening trust in the market for legal services.

1.2. The scientific novelty lies in a holistic, integrative analysis of the linkage between preventive automation tools (contract standardization) and mechanisms for resolving disagreements (ODR) as a single, mutually complementary system that determines the stability and predictability of commercial relations.

1.3. The author's hypothesis is formulated as follows: the introduction of intelligent automation systems based on standardization not only directly reduces conflict by lowering legal uncertainty but also indirectly strengthens market trust by creating a transparent and predictable environment for resolving remaining disagreements through the mechanisms of digital justice.

2. Results and Discussion

The transformation of contractual activity is the starting stage of the automation of legal processes. Historically, most contracts do not arise from scratch but through the refinement and adaptation of previously used templates and standard clauses (boilerplate) [8]. However, such practice often develops unsystematically, which gives rise to textual inconsistencies, errors, and legal uncertainty — the principal determinants of disputes. The standardization of contracts represents the institutionalization and formalization of the relevant procedures, aimed at the unification of provisions, the reduction of transaction costs, and the mitigation of risks by increasing the predictability of the application of law [12].

The technological embodiment and evolution of the idea of standardization are modern Contract Lifecycle Management (CLM) platforms. In contrast to simple collections of templates, intelligent CLM systems use AI and machine learning to automate the full workflow with a contract: from preparing the draft to its performance and subsequent archiving. These solutions are capable of automatically analyzing contract texts, extracting key parameters (timeframes, amounts, obligations), recording deviations from approved standards and potentially risky wording, as well as managing approval and signing processes [14].

The practical effectiveness of this approach is corroborated by real-world cases. For instance, Deloitte employed AI to analyze and standardize 4500 contracts of the telecommunications company BT across 14 jurisdictions; a task impossible to complete manually within tight time constraints was accomplished technologically, which made it possible to identify key risks and to carry out a restructuring of the contract portfolio [15].

Quantitative metrics of automation in contractual activities indicate a pronounced preventive effect with respect to the emergence of disputes (see Table 1). According to industry studies, integration of robotic process automation (RPA) and AI into contract lifecycle management (CLM) systems leads to a 60–80% reduction in processing times, a 40–50% decrease in operational costs, and a 90% reduction in error rates [16]. Moreover, AI tools identify dispute-prone provisions in contract texts with 50% greater accuracy than manual legal review [17]. It is precisely this systemic reduction of errors and elimination of ambiguities in wording that serves as the fundamental mechanism for preventing subsequent disagreements.

Table 1. Comparative analysis of the effectiveness of manual and automated contract lifecycle management (CLM) (compiled by the author based on [16-19]).

Metric (KPI)	Manual process	Automated process (CLM with AI)	Percentage improvement
Average time for contract review	4–8 hours	30–60 minutes	80–90%
Data entry error rate	5–10%	<1%	>90%
Time to close a deal	20–30 days	5–10 days	50–75%
Accuracy of risk identification	Baseline	+50%	50%
Operating costs (index)	100	50–60	40–50%

Thus, the evolution from simple standardization to intelligent CLM solutions establishes a sustainable foundation for reducing the number of conflicts by eliminating their root cause — low-quality and inconsistent contractual texts.

The impact of automation on the dynamics of disputes and the level of market trust has both direct and indirect dimensions. Clarifying these mechanisms makes it possible to assess the systemic effect of implementing LegalTech tools.

The direct effect consists in reducing legal uncertainty. Most commercial disputes arise not from deliberate bad faith, but from ambiguous wording, gaps in terms, or unintentional errors in contracts. Automated CLM suites specifically address these sources: the use of approved templates and clause libraries ensures the consistency and completeness of documentation, while AI modules identify vague or contradictory constructions and suggest more precise alternatives to the lawyer. This approach corresponds to the theoretical model of Gennaioli and Ponzetto, according to which the use of precedents (a functional analogue of standards) improves the quality of legal application and promotes the conclusion of more complete and effective agreements [7]. As a result, automation narrows the space for dispute, making the contract more transparent and enforceable.

The indirect effect is realized through the strengthening of trust, which in the digital economy is determined by the degree of predictability. Trust between counterparties arises when they are able, with high probability, to forecast the partner's behavior and the outcome of the interaction [20]. Automation shapes such predictability at all stages of the transaction life cycle: at formation, CLM systems guarantee the agreement's compliance with internal policies and market standards; during performance, they provide timely reminders of obligations; at the stage of potential dispute resolution (which will be considered below), ODR systems provide a transparent and comprehensible mechanism for resolution. This end-to-end predictability reduces perceived risks and transaction costs, stimulates business activity, and raises the level of market trust.

Thus, automation is not merely a means of increasing operational efficiency but also a system-forming principle that reconfigures the legal space, imparting greater stability, predictability, and institutional trust.

If the automation of contracts is preventive in nature, then systems of digital justice — and above all online dispute resolution (ODR) — provide a technological response to conflicts that have already arisen. The concept of ODR took shape in the mid-1990s as a mechanism for resolving disagreements in electronic commerce, where traditional judicial procedure proved ineffective due to the cross-border nature of transactions, the geographic dispersion of participants, and the low value of claims [21]. A telling example is the eBay dispute resolution platform, which at peak load processed up to 60 million requests annually, demonstrating scalability unattainable for a classical court [23].

The key to understanding the transformational potential of ODR is the idea of technology as the Fourth Party,

formulated by Ethan Katsh and Colin Rule [21]. In this perspective, technology ceases to be merely a communication channel (telephone or mail) and becomes an active participant in resolution: the platform structures negotiations, provides the parties with neutral information, analyzes the stated positions, and on the basis of algorithms proposes mutually acceptable options. In standard, low-complexity cases, the Fourth Party can fully substitute for a human intermediary, effectively automating the entire process.

Having emerged in the private sector, ODR is gradually becoming institutionalized in public justice. Courts in a number of jurisdictions — the United States, Canada, the United Kingdom, and China — are implementing ODR platforms for specific categories of cases: small claims, eviction disputes, debt collection, and traffic violations [11]. Empirical studies record significant effects: processing times are reduced, the burden on the judiciary and administrative staff decreases, and the share of decisions in the absence of one of the parties (default judgments) declines, indicating increased procedural engagement of participants (see Table 2).

Table 2. Key characteristics and outcomes of implementing ODR platforms in judicial systems (compiled by the author based on [24]).

Jurisdiction/Case	Case type	Key technological features	Measurable outcomes
Franklin County, Ohio, USA	Small claims	Asynchronous negotiations, online mediator assistance	Reduction in default judgments, increased user engagement
Utah state courts, USA	Small claims	Integrated system with step-by-step user guidance	Reduced court workload, accelerated case resolution, high degree of user adoption
British Columbia, Canada	Small claims, motor vehicle accident disputes	Public platform with 24/7 access, emphasis on user-centered design	Improved access to justice, process transparency
Connecticut, USA	Traffic fines	Online fine review system (Online Ticket Review)	Reduction in dispute resolution time by more than 100 days

The widespread diffusion of ODR and other LegalTech solutions rests on substantial capital inflows into the sector, which serve as an indicator of stable market expectations regarding its long-term development. An illustrative picture is formed by the trajectory of the expansion of the global LegalTech market, which clearly records this trend (see Fig. 1).

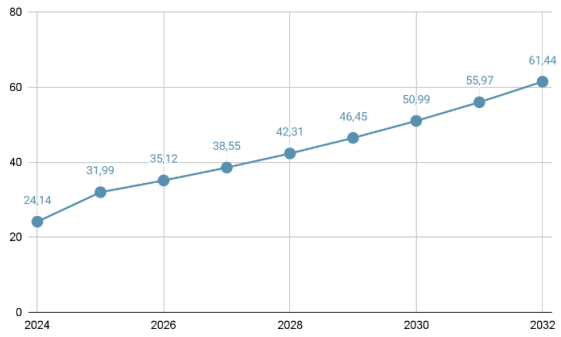

Fig. 1. Forecast of growth of the global LegalTech market (2024-2032) in billion USD (compiled by the author based on [2, 3]).

Thus, digital justice and ODR cease to be an optional alternative: they constitute a mandatory element of the modern legal infrastructure, ensuring prompt and inclusive dispute resolution amid pervasive digitalization.

At the same time, no matter how obvious the gains from automation may seem, the move toward full digital transformation of legal processes is associated with serious institutional and ethical barriers that require careful analysis. Ignoring these risks may lead not to the strengthening of justice but to the emergence of new forms of discrimination and to additional obstacles to access to justice.

One of the most acute challenges is algorithmic bias. Machine-learning models that underpin numerous LegalTech solutions are trained on historical datasets; if the latter reflect entrenched social prejudices (including racial and gender), the algorithms not only reproduce but may amplify them [25]. A telling example is the COMPAS recidivism risk assessment system used in US courts: a ProPublica analysis demonstrated systematically higher risk scores for African Americans compared to white defendants under comparable circumstances, which resulted in harsher sentences [9]. The problem is exacerbated by the opacity of many models (black box): neither the defendant nor even the judge is able to reconstruct the logic of the inference, which undermines the basic principle of due process [9].

A more fundamental normative-philosophical dilemma arises: are we truly digitizing justice, or merely conservatively entrenching existing forms of injustice? The initial motivation — enhancing impartiality and efficiency — materializes in building models trained on corpora of historical judicial data. Yet such datasets are not a neutral archive but a recorded chronicle of long-standing structural distortions. An algorithm, as an instrument of statistical pattern extraction, treats these distortions not as bias but as informative features with high predictive power. As a result, the system's recommendation assumes the appearance of an objective, scientifically valid conclusion. A judge, under the pressure of technological authority, risks assigning greater weight to the scientific score than to professional discretion. In this way, a kind of laundering of human prejudices through a technical procedure occurs, making systemic discrimination less visible and harder to contest.

An equally significant obstacle is the digital divide. ODR platforms, conceived as an expansion of access to justice, can paradoxically generate new barriers for vulnerable groups — people with low digital literacy, without stable internet connectivity, or without modern devices [26]. Mitigating this risk requires designing ODR systems according to the principles of inclusive, user-centered design, prioritizing mobile accessibility and minimizing technological requirements for the user [11].

Finally, cultural resistance and psychological barriers cannot be ignored. The legal profession is traditionally conservative and cautious toward radical innovations [28]. Moreover, research in the psychology of dispute resolution shows that in complex conflicts, where empathy, creativity, and the building of interpersonal relationships are critical, participants prefer in-person formats. Fully automated procedures in such cases often prove to have low effectiveness and do not ensure a subjective sense of justice [10]. The success of ODR platforms is ultimately determined by their ability to maintain a balance among three interrelated pillars — convenience, expertise, and trust.

In other words, effective automation relies not only on technological innovations but also on robust transformation governance strategies, the targeted enhancement of the legal community's competencies, and the establishment of an ethical-legal infrastructure that guarantees fairness and inclusiveness in digital justice.

3. Conclusion

The empirical data obtained show that the automation of legal activity is not a discrete technological innovation but a profound transformational factor that restructures the institutional configuration of the legal system. Reconstructing the evolution — from the unification and templating of contracts to practices of digital justice — has made it possible to formulate a number of fundamental generalizations.

First of all, automation has a two-component nature, combining preventive and dispute-resolution contours. At the preventive level, intelligent contract lifecycle management (CLM) systems, based on standardization, consistently reduce legal uncertainty, eliminate errors and semantic gaps, which directly leads to a decrease in the number of commercial disputes.

Further, in the domain of dispute resolution, ODR platform solutions demonstrate the potential for scalable, accelerated, and economically rational settlement of

disputes. Their effectiveness, however, is not automatic: it is critically contingent on achieving a delicate balance between technological usability, embedded expertise, and — above all — user trust in procedural fairness and transparency of the process.

Finally, the results confirm the hypothesis advanced by the author: end-to-end automation, encompassing both the phase of forming legal relations and the stage of dispute resolution, forms a predictable and transparent legal environment. Predictability becomes the central mechanism for strengthening market trust, since it reduces transaction costs and mitigates risks for all participants in economic turnover.

At the same time, it is unacceptable to ignore serious ethical challenges: these concern algorithmic bias and the risks of deepening the digital divide. The further trajectory of LegalTech should be oriented not only toward efficiency but also toward ethical verifiability and inclusiveness of the systems being created.

Promising directions for future research are linked to the development of standardized methodologies for auditing AI systems for bias and discrimination, as well as to the search for and experimental validation of hybrid models of dispute resolution that optimally combine the speed and efficiency of technologies with indispensable human qualities — empathy, common sense, and creative flexibility in the formulation of solutions.

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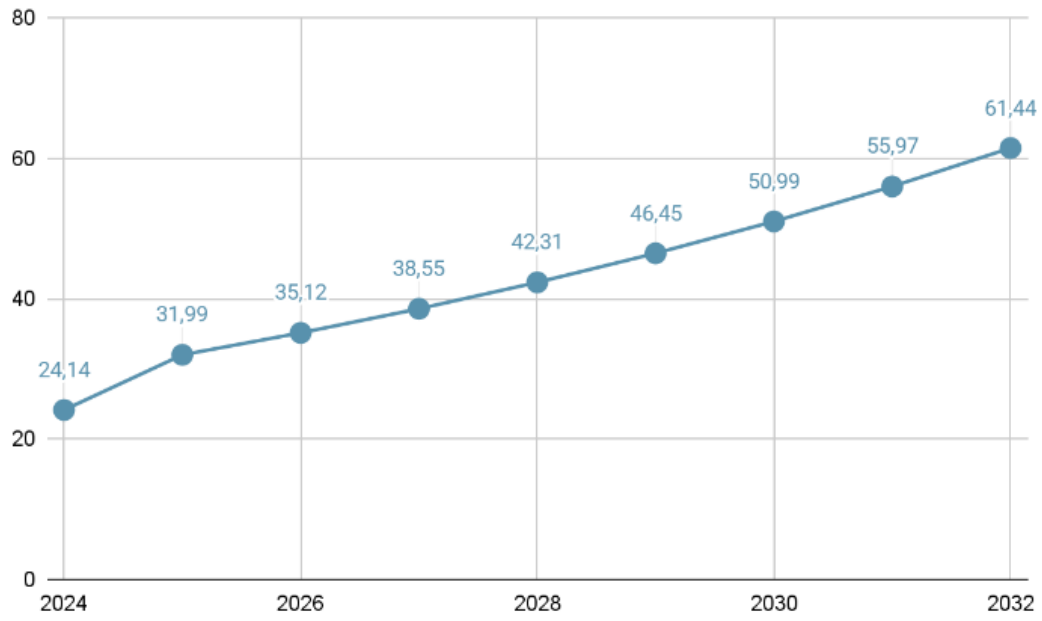
Figure



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