16 years ESJ
Special edition

Electronic Contracts and Their Legal Challenges: A Georgian Judicial Practice Perspective

Zaza Mtchedlishvili, PhD candidate
Grigol Robakidze University, Tbilisi, Georgia

Doi:10.19044/esj.2026.v22n38p371

Submitted: 15 December 2025
Accepted: 03 March 2026
Published: 23 March 2026

Cite As:
Mtchedlishvili, Z. (2026). *Electronic Contracts and Their Legal Challenges: A Georgian Judicial Practice Perspective.* European Scientific Journal, ESJ, 22 (38), 371. https://doi.org/10.19044/esj.2026.v22n38p371

Abstract

This article analyzes the "utopian" perceptions engendered by rapid technological advancement and the concomitant legal challenges arising in the real world. It examines key aspects of the digital economy, including electronic commerce, smart contracts, and their interplay with traditional legal norms, with a particular focus on Georgian legislation. Utilizing comparative-legal, analytical, and doctrinal methods, the research is grounded in contemporary civil law doctrines and the insights of renowned philosophers such as Berdyaev, Hayek, and Lessing. By analyzing judicial practice and legislation from the United States, Canada, Europe, and Georgia, the study provides a multidisciplinary assessment of the impact of technological progress.

Particular attention is given to the formal requirements of transactions and the expression of intent in the digital realm. The study demonstrates that "utopian" promises such as boundless and seamless commercial spaces, often mask significant social and legal risks. The article establishes that despite their widespread adoption, "click-wrap" agreements lack a uniform doctrinal consensus regarding their compliance with classical standards of transaction authenticity, specifically concerning the conscious expression of intent and the identification of signatures.

The research reveals that Georgian regulation of electronic transactions is limited and relies primarily on general norms, leading to

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

inconsistent judicial practice. Specifically, an analysis of Supreme Court of Georgia decisions demonstrates that the absence of an electronic signature renders transactions involving immovable property void. The article concludes that the technological revolution necessitates a structural adaptation of legal systems to address emerging challenges effectively.

It is recommended that Georgia incorporate European and German legal models, which view electronic signatures as essential for ensuring the authenticity of electronic transactions. This approach would enhance the security of digital communications and protect the interests of all parties, thereby minimizing the negative consequences of "utopian" technological progress and fostering a more equitable digital society.

Keywords: Utopia, digital contracts, electronic document, internet platform, electronic signature, text form, smart contract, click-wrap agreement

Introduction

In the twenty-first century, the unprecedented pace and depth of technological advancement are fundamentally reshaping societal, economic, and legal relations. The advent and pervasive dissemination of digital technologies have engendered numerous "utopian" conceptions of an ideal, frictionless digital realm. Nevertheless, as Nikolai Berdyaev observed, "utopias have proven far more realizable than we anticipated," and their materialization begets novel challenges and perils. This scholarly work interrogates the juridical demarcation between these utopias and empirical reality.

On the one hand, the digital revolution has significantly streamlined online commerce and contractual engagements; on the other, it has precipitated a multitude of risks pertaining to personal data protection, social disparities, and encroachments upon fundamental liberties. Amid these exigencies, it becomes increasingly critical to ascertain whether contemporary legal frameworks are prepared to respond commensurately to such transformations while upholding the interests of citizens.

The objective of this paper is to analyze the juridical essence of digital transactions, with particular scrutiny of "smart contracts" and "click-wrap" agreements. The investigation delineates their formal and substantive attributes, juxtaposing them against conventional paradigms of contractual dealings. Special emphasis is accorded to electronic signatures and the legal standing of digital documents, drawing upon exemplars from diverse jurisdictions (including European, German, and Georgian systems). This comparative approach facilitates the identification of lacunae within national legislation and the formulation of remedial recommendations. Ultimately, the study endeavors to elucidate the feasibility of forging a juridically resilient and

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

secure digital milieu, where technological progress harmonizes with fundamental human rights.

Literature Review

This study commences with an examination of Nikolai Berdyaev's philosophical reflections (Berdyaev, 1934) on the realizability of utopias and the attendant risks they pose. This concept, vividly articulated in Aldous Huxley's seminal novel *Brave New World*, underscores that endeavors to construct a perfect society frequently culminate in the erosion of individual liberties. Building upon this philosophical foundation, the paper transitions to an analysis of technological utopias, scrutinizing both their tangible and speculative dangers. Within this context, the research of Joamets and Chochia (2020) is invoked, which investigates how digital technologies can exacerbate inequality. This study aligns with and responds to the work of Brynjolfsson and McAfee (2014), who, within the framework of the "Second Machine Age," address income disparities and the risks of job displacement. The authors conclude that inadequately managed digital-technological progress engenders social tensions and political discontent.

Additionally, the text references Shoshana Zuboff's (2019) concept of "surveillance capitalism," which critiques the collection and commodification of personal data as a threat to human freedom and privacy. In contrast, the paper draws on Friedrich Hayek's (1947) arguments in *The Road to Serfdom*, where he criticizes centralized control whether governmental or corporate and advocates for decentralized systems to maximize individual liberty. The study also references Isaac Asimov's "Three Laws of Robotics," which, according to Balkin (2017), have transcended the realm of science fiction to become central issues in contemporary legal and ethical discourse. These laws mandate the unconditional subordination of technology to human authority, prioritizing human safety. This hierarchical structure emphasizes the necessity for legal systems to effectively regulate technological development to safeguard human security and autonomy.

The core of the paper is devoted to the evolution and legal nature of digital contracts, specifically "smart" and "data-oriented" transactions. This section draws on Nick Szabo's pioneering work (Szabo, 1994, 2022), which defines a "smart contract" as a computerized protocol. Mao and Junhua (2022) further characterize smart contracts as electronic protocols executed through digital code. The paper notes that smart contracts differ from traditional contracts due to their formal structure and capacity for autonomous execution, as exemplified by the operational principles of platforms such as Airbnb. Werbach and Scholz (2017) explore the concept of "algorithmic contracts," wherein computational systems analyze and execute terms, thereby reducing human involvement.

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

However, the paper also highlights problematic aspects. Disparities in legal doctrine concerning the validity of "click-wrap" agreements, as discussed by Gatt (2002) and Buono and Friedman (1999), underscore issues of unilateral term imposition, which restricts user autonomy. Johansson (2014) and Demianets, Elin, and Zharova (2014) echo these concerns. Russian scholar V. Vitko (2012) adopts a more radical stance, arguing that "click-wrap" agreements are inherently deficient due to inadequate party identification, violations of the principle of autonomous intent, and the absence of documentary form, thereby casting doubt on their classification as valid civil law transactions.

The paper further references Georgian legislation and judicial practice (Case No. AS-898-848-2015), which addresses the efficacy and challenges of electronic documents and digital signatures. A judicial ruling emphasized that a real estate purchase agreement concluded via an electronic auction was deemed void due to the absence of a qualified electronic signature, which would have been equivalent to a traditional written form. This decision underscores that, under Georgian law, electronic commerce particularly transactions involving immovable property requires verifiable identification of parties and confirmation of intent, supported by legislative regulation of qualified electronic signatures. The current regulatory framework, however, introduces ambiguity in real-world judicial disputes.

In conclusion, the paper examines "click-wrap" agreements within the context of the doctrine of offer and acceptance. According to Chanturia (2001), online transactions are considered contracts concluded between non-present parties. The paper cites international practice (*Lex Mercatoria*, 2002), wherein online offers become binding upon acceptance. This perspective is supported by Rusishvili (2015) and Bogdanova (2019), who advocate for the application of public offer rules. Conversely, Jorbenadze (2016) distinguishes between an "offer," which contains specific terms, and an "invitation to offer" (*invitatio ad offerendum*), which provides general information, allowing the offeror to ultimately accept or reject the final acceptance.

The Technological Revolution: Between Utopia and Reality

Utopias have proven far more attainable than we once believed. Now, a second, more agonizing question arises: how can we avoid their final embodiment? Utopias are possible. Life is moving toward them, and perhaps a new century of dreams for the intelligentsia and cultural strata is beginning one that will ask how to avoid utopias and return to a non-utopian, less 'perfect,' and freer society." (Berdyaev, 1934). This profound philosophical insight by Nikolai Berdyaev critically alludes to state ideologies that promised class equality, a perfect society, and a legal system tailored to human needs.

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

However, as these utopias transitioned into reality, society was confronted with problems of an entirely new scale, and Georgia was no exception.

The most famous framework for discussing the ethics of autonomous systems is Isaac Asimov's "Laws of Robotics," which were originally conceived as being hard-coded into the positronic brain of every robot. These laws include:

- **The First Law:** "A robot may not injure a human being or, through inaction, allow a human being to come to harm."
- **The Second Law:** "A robot must obey orders given by human beings, except where such orders would conflict with the First Law." (Balkin, 2017).

While originating in science fiction, these principles now transcend the genre, becoming central to modern legal and ethical discourse in the real world. An analysis of the First Law establishes that technology must not be capable of harming humans this should be its foundational principle. The Second Law mandates the unconditional subordination of technology to human authority, provided that such commands do not violate the First Law. This creates a "hierarchical structure" where humanity retains sovereignty and technology remains a subordinate tool. Ultimately, any technological development must be accompanied by effective legal norms that prioritize human safety and fundamental rights.

The Illusion of a Digital Utopia and Its Technological Challenges

The "utopia" of online transactions was envisioned as an ideal, seamless digital space where commercial relations would be fast, simple, transparent, and accessible to everyone without delay. It was a dream of a borderless market, where barriers between consumers and sellers would vanish a vision embodied today by global platforms such as Amazon, Airbnb, eBay, and Uber. In his seminal work, *Code and Other Laws of Cyberspace*, Lawrence Lessig whose work is considered a classic of digital law argues that the "code" (the architecture of the internet) acts as a more powerful regulator than the legal system itself (Lessig, 1999). This reflects a "Berdyaevian concern," suggesting that technological innovations may eventually control human freedom to a greater extent than we currently imagine.

Digital technologies are inherently neutral; the consequences of their existence depend entirely on how they are managed. While their appropriate use fosters unprecedented innovation and well-being, mismanagement risks exacerbating inequality and "social tension" (Brynjolfsson & McAfee, 2014). This inequality manifests in several ways:

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

- **Income Polarization:** A deepening divide where low-skilled workers are pushed into low-paying roles, while the owners of technologies and algorithms reap increasing benefits.
- **"Winner-Take-All" Dynamics:** In the digital realm, a single successful software program can attract an unprecedented number of users, often at the expense of competitors who struggle to gain a foothold.
- **Social and Political Consequences:** The improper deployment of algorithms puts the average workforce at risk, leading to frustration, social tension, and political discontent (Joamets & Chochia, 2020).

The ideal digital world is fraught with real dangers, a phenomenon Shoshana Zuboff explores in *The Age of Surveillance Capitalism*. She emphasizes that large corporations have constructed digital systems that harvest personal data to generate dividends and profit, ultimately threatening user freedom and privacy (Zuboff, 2019). In light of these theories, Friedrich Hayek's reflections on regulation take on a new perspective. In *The Road to Serfdom*, Hayek warns that attempts to centralize system management whether by a state or a corporation inevitably restrict individual liberty (Hayek, 1947). To avoid this, it is essential to design technological platforms that prioritize and safeguard maximum individual freedom.

The Evolution and Legal Nature of Contracts Concluded in Cyberspace

The development of the modern era is intrinsically linked to technological progress (Jorbenadze, 2016). The scale of the "technological revolution" has ushered humanity into an entirely different reality (Koornhof, 2012). Today, a vast majority of civil legal relations involve transactions concluded via internet platforms. This phenomenon is characterized by several advantageous features, such as time efficiency, cost reduction, and the convenience of "one-click" transactions accessible from the home. However, despite the appeal and comfort offered by these digital environments, the rise of online contracts has placed several critical issues on the legal doctrinal agenda regarding the validity and nature of transactions concluded through digital platforms.

Automation and Robotization in Contracts

Modern digital technologies increasingly employ advanced algorithms throughout the various stages of a contract's lifecycle, including preparation, analysis, and execution. For instance, artificial intelligence-driven algorithms are now capable of autonomously drafting standard "smart" contracts (Puchkov, 2019).

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

This automation extends beyond mere document generation; it encompasses the "robotization" of the contractual process, where computational systems evaluate terms and trigger performance without direct human intervention. This shift toward algorithmic reliance raises fundamental questions about the nature of consent and the role of traditional legal oversight in an automated environment.

The term "smart contract" was first coined by the American computer scientist Nick Szabo, who defined it as a "computerized transaction protocol that executes the terms of a contract" (Szabo, 1994). Essentially, a smart contract is a type of electronic protocol written in digital code. Its primary objective is to ensure the automated fulfillment of conditions agreed upon by the parties. Such transactions represent a paradigm shift in the evolution of global civilization and jurisprudence alike.

In recent decades, legal doctrine has established a distinction between transactions based on their external form, categorizing them into paper-based and digital contracts. While paper-based contracts are viewed as the paradigm of the pre-digital era, contracts established in the online sphere are recognized as the pioneers of the information technology age (Mao & Junhua, 2022).

Beyond mere form, as information and computer technologies have advanced, a new category has emerged within the realm of electronic agreements: "data-oriented contracts" (Werbach & Scholz, 2017). Unlike traditional digital documents that simply replicate paper forms, these contracts are designed for machine readability and autonomous execution, further distancing themselves from conventional contractual models.

Smart Contracts

The term "smart contract" was first introduced by the American computer scientist Nick Szabo, who defined the concept as a "computerized transaction protocol that executes the terms of a contract" (Szabo, 1994). Essentially, a smart contract is a type of electronic protocol written in digital code. Its primary objective is to ensure the automated fulfillment of conditions agreed upon by the parties involved. Such transactions represent a paradigm shift in the evolution of global civilization and jurisprudence alike.

In recent decades, legal doctrine has established a distinction based on the external form of transactions, categorizing them into paper-based and digital contracts. While paper-based contracts are viewed as the paradigm of the pre-digital era, contracts established in the online sphere are recognized as the pioneers of the information technology age (Mao & Junhua, 2022).

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

Data-Oriented Transactions and the Mechanism of Autonomous Execution

In the technology industry, a pioneering concept has emerged: data-oriented contracts on digital platforms. In these transactions, the terms are pre-defined in a machine-readable format that can be processed by a computer system. Consequently, the primary "reader" of the document is a digital system rather than a human being (Chechelashvili, 2010). These intelligent technologies are capable of evaluating the performance of data-oriented contracts and determining preliminary compliance autonomously (Shen, 2017).

The uniqueness of a smart contract lies in its code. Unlike traditional paper-based contracts written in natural language, smart contracts generate terms in computer code to perform predefined actions. To illustrate this distinction, consider a standard lease agreement:

- **Traditional Paper Contract:** If a tenant fails to pay rent on time, the contract might state: *"The landlord has the right to terminate the lease."* In this scenario, human intervention is mandatory; the landlord must personally verify the payment status and take action to enforce the clause.
- **Smart Contract:** The same lease condition is embedded in digital code. The system monitors the payment and, if the condition is not met, executes the consequence autonomously without requiring manual intervention (Chen, 2019).

A practical and visual example of this structure is the digital platform **Airbnb**, which utilizes blockchain-like mechanisms for transaction security.

1. **Automated Access:** When a tenant fulfills their obligation by transferring the agreed amount, the generated code automatically provides them with an "electronic key" or digital access code to the property.
2. **Security Deposits:** In the event of documented damage, the security deposit can be automatically transferred to the landlord based on the pre-generated logic of the contract.

While smart contracts possess distinctive features regarding formal structure, consent mechanisms, and execution efficiency, they should be viewed as digital representations of contractual intent. The rights and obligations of the parties are expressed in software code, which serves as a condition for maintaining the legal nature of the agreement (Sergeenkov, 2022).

In the modern world, where legal regulation of traditional contracts is well-established and robust, a conceptual understanding of the bridge between traditional and smart contracts is essential. This connection requires legal

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

definitions that safeguard the principle of **freedom of contract** and the **equality of parties**, while simultaneously minimizing technical flaws and interpretative uncertainties. Ultimately, the existence of smart contracts must integrate both technological and legal components to ensure a balance of interests and contractual stability (Szabo, 2022).

The Conceptual Framework of "Click-wrap" and "Browse-wrap" Agreements

The unprecedented scale of technological innovation has ushered the civilized world into an era of electronic commercialization. This shift introduced novel "digital-legal" constructs, specifically "click-wrap" and "browse-wrap" agreements (Gatt, 2002). Originating in the United States toward the end of the 20th century, these contractual forms were shaped significantly by rapid technological development. A defining characteristic of such agreements is the inherent advantage they afford the developer over the counterparty. This imbalance arises because the supplier unilaterally determines the terms of the contract, leaving the consumer with virtually no opportunity to negotiate or "maneuver" (Buono & Friedman, 1999).

Professor Juliet Moringiello notes that "click-wrap" agreements are ubiquitous across online trading platforms, mobile applications, and software installations. To access a desired service or product, a user visiting a website must typically click a button within a checkbox often labeled "I agree." According to the classic "click-wrap" model, a user cannot finalize a transaction until they confirm their consent to the pre-prepared terms at least once.

In certain instances, such as during software installation, license terms are presented in a manner that requires the user to scroll through them before expressing consent, though there is no strictly enforceable obligation for the user to actually read them. Furthermore, modern practice has seen the proliferation of models where the agreement terms are accessible only via a hyperlink situated next to the "I agree" button. In these cases, the user may signify consent without ever reviewing the underlying terms (Moringiello, 2005).

The Boundary Between Virtual and Expressed Consent

In a doctrinal sense, "click-wrap" agreements do not fit neatly within the paradigm of traditional contractual forms. In civil law, they are often characterized as "telematic" transactions (Moringiello, 2005). Typically, the subject of these transactions is an intangible (digital) asset, though material objects are not excluded. The defining feature of such contracts is their entirely online conclusion, where direct, bilateral negotiations are replaced by a simple "click."

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

According to U.S. judicial practice, these agreements have consistently been recognized as legally binding. Barring instances of fraud or technical error, courts generally deem a "click-wrap" contract valid, provided that essential prerequisites are met: the participation of parties, agreement on essential terms, and appropriate form (Johansson, 2014).

However, legal doctrine remains divided. Some researchers categorize these agreements as a subset of electronic documents (Demianets, Elin, & Zharova, 2014), while others view the "click-wrap" transaction as a form of "conclusive action" (*facta concludentia*) (Savelyev, 2013).

A more skeptical perspective is offered by Professor V. Vitko, who argues that "click-wrap" transactions lack the legal integrity required to represent a robust set of rights and obligations. he points to the "inherent inferiority" of this transactional model, basing his critique on four primary arguments:

- **A) Identification and Formalization:** The act of "clicking a button" does not sufficiently identify or formalize the counterparty in the manner required by civil law (e.g., via a signature or documentary evidence).
- **B) Asymmetry of Intent:** The terms are unilaterally established by the supplier. The user demonstrates participation only through a confirmation click, which Vitko likens to a unilateral acceptance rather than a mutual agreement.
- **C) The Problem of Informed Will:** In practice, users rarely read or perceive the underlying conditions. Consequently, any resulting "agreement" is merely formal and fails to reflect a truly informed consensus between the parties.
- **D) Absence of Documentary Form:** Vitko contends that "click-wrap" does not meet the criteria for a "document." It lacks handwritten or verifiable text, consisting instead of algorithmic code triggered by a "technical act" rather than a valid civil-law transaction (Vitko, 2012).

Click-wrap Agreements as Legal Communication Between Absent Persons and the Doctrine of Offer

Click-wrap Agreements as an Offer

In modern civil law, digital transactions concluded via internet platforms are categorized as transactions between absent persons (*inter absentes*). This classification is based on the principle that transactions between "present persons" apply not only to those in physical proximity but also to those who can communicate in real time (Chanturia, 2001). However, since the cumulative sequence of actions required for real-time communication is often absent during the conclusion of a "click-wrap" transaction, it is considered a transaction between non-present parties.

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

Notably, digital advertising intended to facilitate specific transactions often utilizes the "click-wrap" model, sometimes referred to in this context as a "smart contract." Legal frameworks across jurisdictions treat these relationships differently. For instance, Danish legal doctrine suggests that internet advertising constitutes a binding offer. In contrast, in England, Germany, and Estonia, such transactions are generally viewed as an invitation to treat (*invitatio ad offerendum*) (Lex Mercatoria, 2002).

This study shares the view that a "click-wrap" transaction on an online platform constitutes an agreement between non-present parties, where the algorithmic code embedded in the platform acts as the offer. The binding contractual force is triggered precisely by the act of clicking the performance of acceptance. This perspective is reinforced by the *Principles, Definitions and Model Rules of European Private Law* (2010), which provide that proposals not directed to a specific person may qualify as offers if they clearly indicate a binding contractual intent.

Research in the US and UK also supports the enforceability of "click-wrap" agreements (Gotsiridze, 2019). Edisherashvili (2022) notes that the widespread use of this method in Anglo-American society is driven by the digital banking sector and e-commerce, where counterparties conclude fee-based contracts on digital platforms.

Furthermore, Bogdanova (2019) argues that public offer rules should essentially apply to "click-wrap" transactions if the offeror's intent to be bound is clearly expressed upon the consumer's acceptance. In such cases, the consumer's action the "click" should be assessed as a conclusive action (*facta concludentia*). Similarly, Rusiashvili (2015) suggests that in online auctions and vending machines, offers should be considered binding from the outset.

Finally, Jorbenadze (2016) clarifies the distinction between an offer and an invitation to treat. An invitation to treat is an invitation to an indefinite circle of persons to submit their own offer, expressing a general willingness to enter into contractual relations but requiring further action to finalize the contract. Unlike a specific offer, an invitation to treat is less precise and does not contain an exhaustive enumeration of contractual conditions. For example, while an auction announcement is an invitation to treat, placing specific item information in an online auction constitutes a definitive offer (Jorbenadze, 2016).

The Legal Status of Electronic Documents, Electronic Signatures, and Transactional Forms

When defining the legal nature of an electronic document, it is essential to consider its dual legal and technological properties. Electronic documents are subject to a hybrid regulatory framework: they must satisfy both the traditional requirements established for paper-based documents and

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

the novel technical requirements arising from the evolution of information technology (Posner, 2011).

The legal standards applied to tangible written instruments also extend to electronic documents, particularly regarding the integrity and "immutability" of information stored on digital platforms (Reed, 2004). Jurisdictions such as the United States, Australia, and Canada have adopted functionally equivalent regulations to address these issues. For example, the Canadian *Personal Information Protection and Electronic Documents Act* (PIPEDA) stipulates that an electronic document must be retained for a specific duration in the exact format in which it was originally generated, sent, or received.

Similarly, in Europe, the Swiss *Federal Act on Electronic Signatures* (ZertES) focuses on implementing technical processes capable of detecting forged or altered digital signatures (Svantesson, 2011). In contrast, the Georgian legal landscape currently lacks a comprehensive and clear regulation concerning these additional technical requirements, which are addressed in significant detail by the legislation of leading global jurisdictions. The following subsection will further explore the specific implications of these regulatory gaps within the Georgian context.

Controversial Issues of Electronic Signatures Within National Legal Regulation

The principle that a document created electronically holds the same legal validity as a traditional paper-based document is firmly established in the *Law of Georgia on Electronic Documents and Electronic Trust Services*. Specifically, the Law stipulates that a **qualified electronic signature** possesses the same legal force as a handwritten signature on a physical document (Article 3, Paragraph 1). Consequently, such signatures satisfy the legal requirements for a transaction to be considered in a "simple written form" (Bagishvili, 2018).

However, both globally and within the Georgian context, the internet presents significant challenges regarding the protection of personal data and the integrity of digital information. These difficulties primarily manifest during the identification of a person transmitting an electronic message (Golofer, 2024). Scholars from leading European jurisdictions emphasize that a qualified electronic signature remains the most reliable mechanism to address this identification problem (Moringiello, 2006).

In current Georgian e-commerce practice, consumers typically place orders by filling out pre-prepared electronic forms providing personal data, delivery terms, and payment information which are then transmitted to a digital store’s server. While the storage of this data is usually maintained on dedicated hardware, consumers rarely utilize a qualified electronic signature

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

to finalize these transactions. This absence of a qualified signature creates a significant legal vulnerability, as it deprives the consumer of a robust legal guarantee for the restoration of violated rights in the event of a judicial dispute.

The Form of Digital Agreements

A critical aspect of this study is determining the legal form of the so-called "digital agreement," as it does not neatly align with classical definitions of either written or oral forms. This ambiguity presents a significant legal challenge. Due to the fundamental differences between traditional written contracts and their electronic counterparts, the term "textual-electronic form" has emerged in legal discourse. A key distinction lies in the fact that electronic contracts, by their nature, lack a material "original" in the traditional sense (Tabatadze, 2015).

The relevance of this problem stems from two factors: first, the lack of robust legal regulation for transactions concluded via technical means in many jurisdictions; and second, the evolution of Western legal doctrine. While traditional transactions were historically governed by **consensualism** prioritizing the parties' will as the *a priori* condition for a valid transaction digital relations now necessitate a more structured regulatory approach (Jansen & Zimmermann, 2018).

To achieve consistent judicial application, digital transactions must be analyzed systematically. Currently, legal doctrine provides scant information on this issue, leading to inconsistencies in court practice. A systematic analysis requires:

- A clear formulation and analysis of digital transaction forms.
- A rigorous comparison between digital transactions and traditional written forms (Shugaev, 2023).

A foundational principle of the digital economy is the **"Principle of Non-Discrimination."** Established by UNCITRAL (1996/1998), this principle dictates that a document or contract cannot be denied legal validity or enforceability solely because it is in electronic form. This approach is further reinforced by European law. The European Parliament and the Council of the European Union have established that Member States must ensure electronic signatures are granted legal effect in judicial proceedings and are not refused acceptance merely due to their digital nature (EU, 2025).

French legal doctrine offers an insightful perspective, emphasizing that the written form serves two primary purposes: the creation of evidence and the guarantee of authenticity. French law incorporates the non-discrimination principle through two core tenets:

1. **Principe d'Équivalence (Equivalence):** Digital documents hold the same legal force as those in tangible form.

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

2. **Principe d'Égalité (Equality):** In the event of a legal conflict, courts may not prioritize a document based solely on its medium of origin (Jayme, 2007).

Furthermore, French private law mandates two criteria for the validity of electronic documents: the parties must be identifiable, and the documents must be stored in a manner that ensures their integrity and unity (Terré et al., 2019).

In contrast, Germany provides a more formalistic model. **Section 126a of the German Civil Code (BGB)** stipulates that the electronic form can replace the mandatory written form only if the document is issued with a **Qualified Electronic Signature (QES)** in accordance with the Electronic Signature Act (Federal Ministry of Justice, 2021). As noted by Professor Lothar Determann, while German law allows for this replacement, it imposes strict conditions: a mandatory electronic signature, clear identification of parties, and the availability of identical copies signed by both parties. However, electronic forms are strictly prohibited where the law mandates the written form as an absolute requirement for the contract's validity (Determann, 2021).

Georgian Legal Approach and Judicial Practice on the Form of Electronic Agreements

In the civil legislation of Georgia, the form of a transaction is governed primarily by Article 69 of the Civil Code, which states: "A transaction may be concluded orally or in writing" (Civil Code of Georgia, 1997). While the legislation does not explicitly define a mandatory form for electronic contracts, such agreements are generally considered to satisfy the requirements for a "simple written form" (McCarthy, 2000). Consequently, the legal principles established for written contracts apply equally to electronic ones. As a legal alternative to the traditional written form, the electronic form may be utilized, provided it incorporates modern electronic document management features, most notably the **Qualified Electronic Signature (QES)**. The QES ensures the reliability and authenticity of digital information while verifying the identity and authority of the signatory (Zambakhidze, 2006).

Although the Civil Code recognizes oral and written forms, the *Law of Georgia on Electronic Documents and Electronic Trust Services* specifically regulates the procedures for utilizing electronic signatures. Within the Georgian legal framework, the electronic form is formally recognized; however, in judicial disputes, courts typically equate electronic or textual contracts with the legal norms governing written transactions.

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

To illustrate this, we examine the reasoning of the Supreme Court of Georgia regarding the acquisition of immovable property via an electronic auction. In a landmark ruling (**Case No. AS-898-848-2015**), the Supreme Court deemed a contract for the purchase of real estate concluded through an electronic auction void due to non-compliance with essential formalities. The court's reasoning included the following key points:

- **Recognition of Trends:** The court acknowledged the increasing utilization of digital contracts in daily life and noted that electronic agreements are generally equivalent to those in "simple written form."
- **Formalistic Approach:** Guided by the *Law of Georgia on Electronic Documents and Electronic Trust Services*, the court adopted a formalistic stance. It noted that while the auction platform employed a multi-stage registration process involving SMS codes, web activation links, and unique credentials (usernames and passwords) this process alone was insufficient for high-stakes transactions.
- **The Necessity of a Signature:** The Cassation Chamber emphasized that despite the completion of all technical steps between the buyer and seller, the absence of a **qualified electronic signature** which is the legal equivalent of a physical signature meant the contract failed to meet the mandatory written form requirements for real estate transactions.
- **Identification Risks:** The court observed that without a qualified electronic signature, the auction process lacks a verifiable mechanism to guarantee that unauthorized persons cannot influence the transaction.

Consequently, the Cassation Chamber held that, in the absence of a supplemental contract executed in accordance with Article 61(2) of the Civil Code, the agreement was unequivocally void. The court underscored that for voluntary auctions involving immovable property, the general provisions of the Civil Code (specifically Articles 187 and 327) regarding formal requirements must be strictly applied. The ruling concluded that even if there is clear agreement on essential terms and evidence of payment, a failure to adhere to prescribed formalities negates the existence of a valid contract and the enforceability of the seller's obligation to transfer property rights.

Research Methodology

The methodological framework of this study is grounded in classical academic traditions, providing a profound, multidimensional analysis of the legal impact of digital technologies. The research primarily utilizes the **comparative-legal method**, involving a comprehensive analysis of legislative norms and judicial practices across diverse jurisdictions. Specifically, the

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

study conducts a systemic and comparative evaluation of the legal frameworks in the United States, Europe (with a particular focus on Germany), and Georgia. This approach allows for the identification of regulatory contradictions and the analysis of legal mechanisms within the evolving digital economy, especially regarding the formal requirements of electronic contracts and the function of electronic signatures. Comparative analysis is instrumental in highlighting the "lacunae" or weaknesses within Georgian legislation, thereby revealing trends for legal harmonization in the digital sector.

Simultaneously, the study relies heavily on the **analytical method**, which involves the logical decomposition of conceptual categories and the examination of their interrelations. This is particularly evident in the analysis of "smart contracts," **"click-wrap" agreements**, and data-oriented transactions. Each of these constructs is subjected to a detailed breakdown of its formal (technological code) and substantive (authenticity of the expression of intent) aspects.

As a form of critical analysis, this method facilitates the identification of doctrinal contradictions such as those surrounding the legal nature of "click-wrap" agreements and bridges the gap between technological utopias and real-world legal risks. Furthermore, the analytical approach integrates philosophical perspectives, ensuring an interdisciplinary dimension that captures the socio-ethical implications of legal research.

Results

The findings of this study elucidate several critical considerations that illustrate the complex interplay between technological advancement and legal regulation. While digital technologies offer unprecedented opportunities for economic development, inadequate regulation in this domain engenders risks that transcend the bounds of "utopian" visions.

- **The Legal Nature of Digital Transactions:** The research demonstrates that "smart contracts" and "click-wrap" agreements, despite their technological innovativeness, fundamentally retain the legal character of contracts. However, the specific modalities of their formation such as the act of "clicking a button"raise significant questions regarding the conscious intent and consent of the parties. This has led to divergent assessments within legal doctrine, an issue for which Georgian legislation fails to provide clear and unequivocal answers.
- **Significance of Electronic Signatures:** This study underscores the critical importance of utilizing **qualified electronic signatures (QES)** to ensure the legal validity of electronic documents. The practice of the Supreme Court of Georgia, specifically the case involving an electronic auction, confirms that contracts executed without such a

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

signature may be deemed void due to non-compliance with formal requirements. This highlights an urgent need for the Georgian regulatory framework to undergo a comprehensive review and refinement, incorporating key aspects of legislation from advanced Western jurisdictions.

- **Imperfections in Regulatory Frameworks:** The research reveals a lack of specialized norms for regulating electronic transactions within Georgian legislation. Consequently, courts are compelled to apply general legal provisions, fostering inconsistent judicial decision-making. This inconsistency risks providing inadequate protection for human rights, particularly in high-stakes transactions like immovable property auctions.
- **Comparative-Legal Insights:** An analysis of European, and specifically German, legal frameworks demonstrates that progressive jurisdictions actively adapt their legislation to accommodate technological advancements. The German approach, which mandates qualified electronic signatures to ensure the authenticity of electronic transactions, establishes a high standard of protection. This serves as a primary model for how legal systems can keep pace with technological progress while maintaining legal certainty.

These findings provide a solid foundation for the concluding section, where existing challenges are summarized and potential legislative solutions are proposed.

Conclusion and Recommendations

Regarding the specific regulation of electronic transactions and contracts, the civil legislation of Georgia diverges from the legal frameworks of advanced Western jurisdictions. Currently, Georgian law lacks specialized provisions tailored to the unique complexities of digital commerce. While the conclusion of electronic contracts is permissible under general provisions governing the form of transactions, this reliance on broad norms creates significant legal ambiguity. Based on the research findings and objectives of this study, the following recommendations are proposed to enhance the Georgian legal framework:

1. **Introduction of the "Electronic Form":** As part of a broader legislative reform, the Georgian legal doctrine should formally introduce and define the **"electronic form"** as a distinct legal category for transactions. This would provide a dedicated regulatory structure for documents and contracts created on digital platforms.
2. **Legal Equivalence in the Civil Code:** It is essential to incorporate specific amendments into the Civil Code of Georgia that formally

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

equate the "electronic form" with the traditional "written form." This would ensure that transactions finalized in the digital realm hold the same legal weight and enforceability as those on paper, provided they meet certain criteria (such as the use of qualified electronic signatures).

3. **Terminology Standardisation:** In the context of digital relations, the terminology should shift from a strict reliance on the "written form" to the more accurate and technically appropriate **"electronic form."** This shift would facilitate more consistent judicial interpretation and reduce the risk of transactions being deemed void solely due to formalistic shortcomings.
4. **Specialized Regulatory Frameworks:** Beyond general equivalence, the Georgian legal system requires specialized norms developed specifically for digital platforms. These rules should address the nuances of "click-wrap" agreements, automated execution, and party identification, thereby ensuring a balance between technological innovation and the protection of fundamental human rights.

Ultimately, these reforms would align Georgia's digital economy with international standards, fostering a secure, stable, and equitable digital society where technological progress harmonizes with established legal principles.

Conflict of Interest: The author reported no conflict of interest.

Data Availability: All data are included in the content of the paper.

Funding Statement: The author did not obtain any funding for this research.

References:

1. Bagishvili, A. (2018). *Commentary on the Civil Code, Book III*. International Cooperation of Germany.
2. Balkin, J. M. (2017). The three laws of robotics in the age of big data. *Ohio State Law Journal, 78*(1). Retrieved September 10, 2025, from https://doi.org/10.2139/ssrn.2890965
3. Berdyaev, N. (1934). *On the destination of man*. (As cited in A. Huxley, *Brave New World*, Siesta Publishing, p. 8).
4. Bogdanova, E. (2019). Problems of applying smart contracts in transactions with virtual property. *Lex Russica, 152*(7), 108–118. Retrieved August 29, 2025, from https://doi.org/10.17803/1729-5920.2019.152.7.108-118
5. Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. W.

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

W. Norton & Company. Retrieved August 18, 2025, from http://digamo.free.fr/brynmacafee2.pdf

6. Buono, F., & Friedman, J. A. (1999). Maximizing the enforceability of click-wrap agreements. *Journal of Technology Law and Policy, 4*(3). Retrieved August 19, 2025, from https://scholarship.law.ufl.edu/jtlp/vol4/iss3/2
7. Chanturia, L. (2001). *Commentary on the Civil Code, Book III*. Law Publishing.
8. Chechelashvili, Z. (2010). *Contract law* (2nd ed.). Bona-Causa.
9. Chen, J. D. (2019). The legal structure of smart contracts. *Orient Law, 3*. Retrieved August 18, 2025, from https://www.researchgate.net/publication/366442212
10. Demianets, M. V., Elin, V. M., & Zharova, A. K. (2014). *Entrepreneurial activity on the internet*. Law Company.
11. Determann, L. (2021). Electronic form over substance: eSignature laws need upgrades. *UC Law Journal, 72*(1403). Retrieved August 5, 2025, from https://repository.uclawsf.edu/hastings_law_journal/vol72/iss6/4
12. Edisherashvili, T. (2022). *Legal nature of electronic contracts in private law relations*. Grigol Robakidze University. Retrieved September 12, 2025, from https://dspace.nplg.gov.ge/handle/1234/375025
13. European Parliament and the Council of the European Union. (2025). *Directive 1999/93/EC on a community framework for electronic signatures*. Official Journal L 013. Retrieved September 2, 2025, from https://eur-lex.europa.eu/eli/dir/1999/93/oj
14. Gatt, A. (2002). Electronic commerce click-wrap agreements: The enforceability of click-wrap. *Computer Law and Security Review, 18*(6), 405–410. Retrieved August 19, 2025, from https://doi.org/10.1016/S0267-3649(02)01105-6
15. Germany, Federal Ministry of Justice. (2021). *German Civil Code (Bürgerliches Gesetzbuch – BGB)*. Retrieved September 4, 2025, from https://www.gesetze-im-internet.de/englisch_bgb/
16. Gotsiridze, S. (2019). *The legal nature of electronic contracts*. Tbilisi State University.
17. Hayek, F. A. (1947). *The road to serfdom*. Reader's Digest Edition. Retrieved August 18, 2025.
18. Jansen, N., & Zimmermann, R. (2018). *Commentaries on European contract laws*. Oxford University Press. Retrieved September 1, 2025.
19. Jayme, E. (2007). Substitution and the principle of equivalence in private international law. *Annuaire de l'Institut de Droit International, 72*, 94–110. Retrieved September 2, 2025.

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

20. Joamets, K., & Chochia, A. (2020). Artificial intelligence and its impact on labor relations. *Law Journal of the Republic of Georgia, 1*. Retrieved August 16, 2025, from file:///C:/Users/User/Downloads/Joamets_Chochia.pdf
21. Johansson, A. (2014). *The enforceability of clickwrap agreements: A study of United States of America contract law* [Master's thesis, Umeå Universitet]. Retrieved August 19, 2025, from https://www.diva-portal.org/smash/get/diva2:807840/FULLTEXT01.pdf
22. Jorbenadze, S. (2016). *The scope of freedom of contract in civil law* [Doctoral dissertation, Tbilisi State University]. Retrieved September 8, 2025, from https://press.tsu.ge/data/image_db_innova/disertaciebi_samartali/sergi_jorbenadze.pdf
23. Koornhof, P. (2012). Enforceability of incorporated terms of electronic agreements. *Speculum Juris, 3*(1). Retrieved August 18, 2025, from https://www.saflii.org/za/journals/SPECJU/2013/3.pdf
24. Lessig, L. (1999). *Code and other laws of cyberspace*. Basic Books. Retrieved August 16, 2025, from https://openlibrary.org/books/OL7593621M/
25. Lex Mercatoria. (2002). *The principles of European contract law*. Retrieved August 26, 2025, from https://www.internationalcontracts.net/international-law-documents/Principles-of-European-Contract-Law.pdf
26. Mao, T., & Junhua, C. (2022). Smart contracts in blockchain. In *Proceedings of ICBBEM 2022* (pp. 5–12). Retrieved August 18, 2025, from https://doi.org/10.2991/978-94-6463-030-5_86
27. McCarthy, P. (2000). *Digital transformation: The essentials of e-business leadership*. McGraw-Hill.
28. Moringiello, J. M. (2005). Signals, assent, and internet contracting. *Michigan Law Review, 103*, 1316–1340. Retrieved August 19, 2025, from https://doi.org/10.2139/ssrn.859485
29. Parliament of Georgia. (1997). *Civil Code of Georgia (No. 786)*. Legislative Herald of Georgia. Retrieved September 11, 2025, from https://matsne.gov.ge/document/view/31702
30. Principles, Definitions and Model Rules of European Private Law. (2010). *Draft Common Frame of Reference (DCFR)*. (C. von Bar & E. Clive, Eds.). Sellier.
31. Puchkov, O. A. (2019). Transformation of contract law in the context of information technologies. *New Trends in Legal State, Theory and Practice, 2*(56).
32. Reed, C. (2004). *Internet law: Text and materials* (2nd ed.). Cambridge University Press. Retrieved September 6, 2025.

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

33. Rusiashvili, G. (2015). *Cases in the general part of civil law*. World of Lawyers.
34. Savelyev, A. I. (2013). Electronic commerce in Russia without EDS: Illusion or reality. *Civil Law Bulletin, 5*. Retrieved August 19, 2025, from https://es.bookmate.com/books/dcmqCi1B
35. Scholz, L. H. (2017). Algorithmic contracts. *Stanford Technology Law Review, 20*(2). Retrieved August 18, 2025, from https://law.stanford.edu/wp-content/uploads/2018/03/3_SCHOLZ-FINAL_Formatted_Mar18.pdf
36. Sergeenkov, A. (2022). *What is smart contract risk?* CoinMarketCap Academy. Retrieved August 18, 2025, from https://coinmarketcap.com/academy/article/what-is-smart-contract-risk
37. Shen, L. (2017, March 30). Robots are replacing humans at all these Wall Street firms. *Fortune*. Retrieved August 18, 2025, from https://fortune.com/2017/03/30/blackrock-robots-layoffs-artificial-intelligence-ai-hedge-fund/
38. Shugaev, R. (2023). Electronic form of transactions: Issues of legal regulation. *Legal Issues, 4*(42), 40–63. Retrieved September 1, 2025, from https://doi.org/10.38044/2686-9136-2023-4-2-40-63
39. Supreme Court of Georgia. (2015). *Decision on Case No. AS-898-848-2015*. Retrieved September 13, 2025, from https://www.supremecourt.ge/ka/fullcase/57405/1
40. Svantesson, D. (2011). Fundamental policy considerations for the regulation of internet cross-border privacy issues. *International Journal of Private Law, 4*(6). Retrieved September 6, 2025, from https://doi.org/10.2202/1944-2866.1138
41. Szabo, N. (1994). *Smart contracts: Building blocks for digital markets*. Retrieved August 18, 2025, from https://www.fon.hum.uva.nl/rob/Courses/InformationInSpeech/CDROM/Literature/LOTwinterschool2006/szabo.best.vwh.net/smart.contracts.html
42. Tabatadze, ლ. (2015). *Determination of applicable law and competent court in an electronic contract*. S.I.F.A.
43. Terré, F., Simler, P., Chénédé, F., & Lequette, Y. (2019). *Droit civil: Les obligations*. Dalloz.
44. UNCITRAL. (1998). *Model law on electronic commerce with guide to enactment*. United Nations. Retrieved September 2, 2025, from https://uncitral.un.org/sites/uncitral.un.org/files/media-documents/uncitral/en/19-04970_ebook.pdf

ISSN: 1857-7881 (Print) e - ISSN 1857-7431
20-21 November 2025, Tbilisi, Georgia

45. Vitko, V. S. (2012). *Civil-law nature of the license agreement*. Statut Publishing. Retrieved August 25, 2025, from https://f.eruditor.link/file/2090372/
46. Zambakhidze, T. (2006). Fundamentals of legal regulation of electronic commerce (problems and prospects). *Georgian Law Review, 8*(1). Retrieved September 12, 2025, from https://newvision.ge/ka/journal/georgian-law-review/
47. Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontier of power*. PublicAffairs. Retrieved August 18, 2025, from https://doi.org/10.1007/s00146-020-01100-0