Navigating in the Law of Digital Reality: Contractual and Jurisdictional Challenges in a Borderless World

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***Abstract*—The Law of Digital Reality can be defined as a confluence of various existing aspects of private law and public law (or their intersection), which regulates the rights and obligations of the users and the service providers both within and outside of the digital world in respect of their activities related to the digital reality and establishes the legal framework for creating and maintaining such a digital environment. To comprehend the Law of Digital Reality it is essential to recognize that participation in any kind of digital reality constitutes a contractual relationship between the user and the service provider. However, the users do not conclude contract with each other, their relationships are non-contractual. Any violation of rights among the users, therefore, occurs on a non-contractual basis. This distinction fundamentally influences the obligations of service providers and users, and their potential claims in the case of violation of rights. Given that legal systems are territorial and national entities (with the EU being a regional exception), it is necessary to address the question of which law is applicable to the aforementioned legal relationships. The article aims to summarize the potential solutions for determining jurisdiction and identifying the applicable law. This will also highlight that there are no universal answers to legal questions in the context of a geographically unlimited phenomena.**

***Index Terms*—Virtual reality, Augmented reality, Digital Reality, Contract law, Law enforcement, Consumer protection**

I. Introduction

The Internet is one of the greatest inventions of mankind. Not merely an invention, but a truly earthshaking innovation as defined by J. Schumpeter. According to Schumpeter, innovation involves a new combination of existing economic foundations and forces, what is able to create new needs and consumer habits. The purpose of innovation, within this framework, is not merely to satisfy existing needs but to fundamentally alter them. In doing so, innovation transforms widely accepted human values. Schumpeter identified five types of innovations: (a) the creation of a new product or the improvement of an existing one, (b) the development of new industrial processes, (c) the establishment of a new market, (d) the discovery of new independent resources, and (e) the foundation of a new organizational structure.[1]

The emergence of Internet in the 1990s has changed the life of everyday fundamentally. New ways of consuming have become widespread, new types of entertainment have taken over the leading role, and new methods of working (both in industry and service providing) determine our life. At the core of these developments is the Internet's ability to establish new connections in public and private networks and to facilitate the near-instantaneous transfer of data between people. Where new possibilities arise, so too do new risks. The legal system must find adequate legal solutions in order to support the exploitation of new possibilities, while also establishing a framework to mitigate the associated risks and challenges.

The virtual world is one of the consequences of the technological advancements driven by the increasing global accessibility of the Internet.

In October 2021, Mark Zuckerberg announced that Facebook would be rebranded as Meta. The new name reflects the new era what Mark Zuckerberg envisions through his social media platforms. The proposed future is a “metaverse” rather than a mere social media platform. In order to create the metaverse, the company has invested $36 billion since 2019, demonstrating the significance and scale of this development. Meta seeks to establish a new virtual and augmented reality environment where realistic avatars represent users engaging in various activities—such as playing, working, training, learning, or other endeavors—within the 3D metaverse.[2] This phenomenon deserves thorough sociological research due to the significant effects and potential risks on human behavior and lifestyle. Recently, however, the development of the metaverse has been notably overshadowed, primarily due to the high costs of development, slow technical progress, and the expensive tools required for its further enhancement. Large technology companies, including Meta, are currently focusing more on exploiting artificial intelligence. Nevertheless, legal analysis of the metaverse remains crucial, as technological breakthroughs can occur at any time and the law should be prepared to address them swiftly.

The main goal of this article is to establish a comprehensive framework for the Law of Digital Reality (hereinafter referred to as LoDR), which encompasses the legal rights and obligations of users and service providers within digital environments. LoDR is not merely a specialized legal subtopic for computer games but an increasingly important field of law that intersects with various areas of private and public law. By defining the scope and structure of LoDR, this study aims to provide a guideline of how legal principles can be applied to the unique challenges posed by digital realities.

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The research is motivated by the urgent need to address the legal ambiguities and complexities that continuously arise in digital environments. As digital realities become more pervasive, the lack of a clear legal framework may result significant risks for users, service providers, and other stakeholders. Issues regarding virtual property rights, contractual relationships, jurisdictional conflicts, and the protection of personal data in digital spaces require immediate attention. Without a proper legal framework, the potential for abuse and legal disputes in digital realities will only grow, undermining the benefits of these innovative technologies.

This study distinguishes itself by framing LoDR as a comprehensive legal field that goes beyond the narrow focus on virtual property or gaming-related issues. While previous research has explored specific aspects of virtual reality (as it will be demonstrated below), such as intellectual property rights or contractual obligations, this article seeks to synthesize these areas into a unified framework. By examining the legal relationships between users, service providers, and other actors in digital realities, this research offers a new perspective on how existing legal principles can be adapted to tackle the unique challenges of digital environments. Furthermore, this study identifies the need for new legal definitions and dispute resolution mechanisms tailored to the complexities of digital realities.

In general, the primary challenge in developing LoDR is to reconcile the borderless nature of digital reality with the territorial nature of legal systems. Digital environments can operate across borders, making it difficult to determine which jurisdiction's laws apply to disputes occurring within these platforms. Moreover, the contractual relationships between users and service providers, as well as the non-contractual interactions among users, raise complex legal questions that are not adequately resolved by existing laws. For example, the recognition of virtual property rights, the enforcement of contractual terms, and the protection of users' privacy and identity in digital spaces all require innovative legal solutions. These challenges underpin the need for a flexible and adaptive legal framework which can keep pace with technological advancements.

The study begins by examining the concepts of reality and digital reality, as a clear understanding of these terms is essential for interpreting potential legal frameworks. Subsequently, potential definition of LoDR is presented, along with a synthesis of the legal branches and inquiries that constitute the corpus of LoDR. The third section of the article explores the nature of legal relationships between actors in the metaverse, as these relationships are fundamental to the structure and core elements of LoDR. Finally, the study seeks to determine how the boundlessness of digital reality can be managed within the constraints of a legal system operating within physical boundaries.

II. Research methods

This paper falls within the domain of law and does not engage deeply with informatic issues through the lens of STEM disciplines. Instead, it relies on basic and widely accepted notions of virtual and digital reality to provide a contextual foundation for legal assessment without challenging these concepts. The primary methods of investigation are governed by doctrinal jurisprudence. The first part of the research is historical and philosophical in nature, exploring scientific theories on reality. The second part of the study focuses on the framework of LoDR and practical implications related to legal issues of metaverse. Throughout the paper, a legal dogmatic approach and text-based qualitative analysis are applied. The legal research methodology includes a systematic examination of statutory provisions and scientific literature relevant to the topic. Legal hermeneutics is utilized to interpret legislative texts and case law, ensuring a thorough understanding of the legal principles and doctrines involved. Furthermore, the research incorporates doctrinal analysis to assess scholarly opinions and theoretical perspectives on the relevant issues. By integrating these methodologies, the study provides a comprehensive analysis of the legal framework governing the metaverse.

III. Definition of Digital Reality

Defining the LoDR necessitates first defining the concept of Digital Reality. The initial question is how we apprehend reality. Is reality, by definition, a non-digital phenomenon, with its digital counterpart representing an advancement? Or does reality exist in multiple forms, all distinct from the imaginary? Describing reality is inherently complex and primarily falls within the domain of philosophy. The most elementary definitions can be found in dictionaries, such as the following: “The state of things as they actually exist, as opposed to an idealistic or notional idea of them”[3], “the true situation and the problems that actually exist in life, in contrast to how you would like life to be”[4], “the state of things as they are, rather than as they are imagined to be”[5].

From a philosophical perspective it is essential to emphasize the role of Plato, the great Greek philosopher, who articulated his famous cave metaphor concerning life and knowledge. In In Plato's view, our usual existence closely resembles a prison. Our environment as we perceive it is similar to shadows. Behind these shadows lie the more noble ideas. According to Plato, ideas are posited wherever we use the same name for a certain set of individual things. Ideas represent the general forms or species of existence. However, ideas are not mere general abstractions, they constitute the only true metaphysical reality. Individual things are ephemeral, while ideas are the eternal archetypes of things, which will never vanish. One of the fundamental philosophical questions is which has a higher level of reality: the general or the individual? According to Plato ideas constitute true reality, whereas individual things are imperfect replicas.[6]

Aristotle had a different perspective. Unlike Plato, he did not follow the above argument that the general is an abstract idea with a privileged reality. Instead, Aristotle posited that the general is the common essence of existing individual objects. Later in the medieval period the unversialia debate (universialia is the general notion behind the unique objects) resurfaced again. Theorists sought to determine whether general notions possess reality. During the age of scholastic philosophy, two main theories emerged: realism and nominalism. Realism has meant that the higher level of reality is attributed to general terms as opposed to individual things. (It is important to note that contemporary realism refers to the opposite: today, a realist

acknowledges only the physical and temporal surroundings. In this sense, scholastic realism would today be considered idealism.) In contrast, proponents of nominalism argued that general terms do not have real existence; only individual entities do, and general notions exist solely in our minds as names for different things. These two theories are encapsulated in the theses "Universialia ante rem" and "Universialia post rem". Pierre Abélard synthesized these positions with his theory of "Universialia in rebus". He argued that general ideas cannot be artificially separated from individual objects because the general notion exists always within the particular thing.[7] In the early 19th century, Hegel developed his own logic concerning the dialectic of existence and nothingness, which are connected through being, expanding this framework to culminate in the concept of the ultimate spirit.

This basic summary highlights that reality has always been central to philosophical thought. Based on the contemporary infocommunication science reality can be interpreted "as a set of conceptions and perceptions that form an integrated unit of comprehension, and create an understanding of what is possible, desirable and actual."[8] It is important to note that, from Plato through the scholastic theorists to the present notion, reality has consistently been connected to the human mind and cognitive faculties of understanding. Reality needs to be perceptible.

Another fundamental question is the definition of virtuality. Typically, virtuality is used as the counterpart to real things. Virtual entities do not exist in reality as physical objects but manifest without any material substance. According to Baranyi et al. we can "consider any manifestation to be 'virtual' that has a referential aspect, regardless of whether that manifestation appears purely in someone's imagination, or in a specific physical or digital solution, and regardless of whether it points to a real (physical) or a purely imaginary concept, or to a specific, concrete object (i.e. an instantiation of a concept)."[9] Reality exists in many forms, varying by degree of physicality. A common concept is augmented reality (or extended reality, mixed reality) which involves visually represented objects within the physical environment. In contrast, virtual reality "can be conceived of as any artificially constructed environment (whether physical or digital) that contains virtual objects."[10]

Baranyi et al. define digital reality as a high-level integration of virtual reality, artificial intelligence, and 2D digital environments. This represents a highly contextual reality for humans, offering a wide range of possible application. The Internet of Digital Reality (IoD) refers an interoperable environment for digital realities, where they are connected in a harmonized network. It has numerous technological prerequisites, one of which is the importance of artificial intelligence and the possibility of high level of connectivity. The metaverse, as a form of IoD was thoroughly explored by Wersényi in 2023.[11]

The multilevel connection provides new advanced functionality in the integrated cyber space, raising a growing number of technological and legal questions. In this article the author discusses the scope of LoDR and its basic structural attributes based on the above definitions.

IV. The Scope of Law of Digital Reality (LoDR)

The legal assessment of digital reality originates from the video game industry.

The video game industry plays a leading role among creative industries due to its substantial global revenue generation. Many video games offer players the opportunity to create or collect items ranging from common to extremely rare. In the online world, these unique assets acquire value through the multiplayer system of the games. While players can trade these assets for virtual currency within the game, this becomes more legally intriguing when these assets are sold for real money. For example, in *The Sims Online* (which servers has been already shut down) players could purchase prebuilt houses from in-game real estate agents, allowing them to save time on building and designing. The virtual homes gained a real-world value.[12]

Games that allow the direct or indirect transfer of an object (an item, a character, or a complete account) from one player to another can lead to real money transactions. This raises the legal question, that a virtual item can be sold like a real object? Can it be the subject of a sales contract? Can virtual property be considered a form of property? These were among the first legal questions posed by virtual reality, but they are certainly not the last.

New fields of law continuously emerge alongside the technological development. The concept of digital reality raises many legal questions, particularly regarding how to apply laws designed for the offline world in the digital era. Do we need new legislation, or will courts reinterpret existing laws to address these new challenges?

The legal evaluation of the law of virtual reality is not new in jurisprudence. In 1994, J. Russo and M. Risch published their article entitled "The Law of Virtual Reality. Scope of Protection for Virtual Works" in Computer Software Treatise. Three decades ago, Russo and Risch investigated virtual reality from the aspect of copyright law, highlighting the importance of intellectual property protection even in the early years of virtual reality.[13] In 2004, F. G. Lastowka and D. Hunter published their often-cited article in California Law Review with the title of "The Laws of the Virtual Worlds". They argued that laws of virtual worlds are significant for three main reasons. First, virtual reality attracts continuously growing number of participants. At that time, the platform named "There" was in beta testing, what was not a gaming environment, but a virtual place for everyday living. Second, as illustrated by "There", the boundaries between the virtual and real worlds were increasingly fading. Microtransactions in virtual realities for real money have a significant economic impact. Third, the exploration of virtual world laws was important because these worlds provide parallel, alternative legal systems where new forms of social regulation emerge.[14] The focus of Lastowka and Hunter's research was on the applicability of property rights to virtual assets. In the last decade and a half, the primary research topic in legal literature has been the property issues of virtual worlds, although many other areas are increasingly being explored. Recently, Nekit argued that social media accounts are multifaceted, encompassing contractual, intellectual property, and property aspects. According to Nekit, these accounts can be considered a form of virtual property as they meet its defining characteristics.[15] Ramirez-Montes investigated the significant rise in metaverse-based EU trademark applications, which poses new challenges for EU tribunals when they apply the trademark law provisions and

theories in the metaverse.[16] As online fraudulent activities become more widespread, metaverse-related cybercrimes are also frequently discussed in the relevant literature.[17] [18] As can be seen, the literature on virtual reality is diverse among scholars; therefore the following table summarizes the key contributions of a few authors to illustrate the development of scientific comprehension.

TABLE I
OVERVIEW OF THE RELEVANT LITERATURE. COMPILED BY THE AUTHOR.

Name of the Author	Main contribution
Castronova, Edward	Analyzed the economic value of virtual worlds through the example of Norrath in the game called Everquest [19]
Fairfield, Joshua	Defined virtual property as a rivalrous, persistent, and interconnected code that mimics real world characteristics [20]
Blazer, Charles	Added secondary market value and "value-added-by-users" attributes to Fairfield's characteristics [21]
DaCunha, Nelson	Identified virtual property as Fairfield, but added the transferability requirement [22]
Nelson, John William	Argued against virtual property. It is created by developers; granting rights to users reduces the developers' control [23]
Sheldon, David P.	Emphasizes the contractual nature and limitations of virtual property [24]

If we aim to define LoDR, we must first identify and map all relevant legal aspects of digital reality, which can serve as the foundation of abstract definition. The following tables outline various (though not exhaustive) fields of law that are implicated by one or more legal issues in the digital reality, along with some examples:

TABLE II
LEGAL MAP OF DIGITAL REALITY. COMPILED BY THE AUTHOR.

Private law in Digital Reality	
Legal fields	**Examples of issues**
Personality rights	Extension of private life in the digital world; freedom of expression and hate speech; abuse of identity
Property law	Possibilities of virtual property; property-like rights of users
Contractual law	Right and obligations of the users and services providers, the whole system will be covered by general terms and conditions; unfair terms in the digital sphere
Inheritance law	Possibility to inherit the "virtual property" or other values in the digital reality
Family law	Digital reality as a scene for child-parent contact
Intellectual property law	Digital reality is an intellectual property per se; trademark, copyright or design infringement in the digital reality; copyright aspects of interoperability; IP rights of user generated contents; IP rights on virtual objects
International private law	Digital reality is a cross-border phenomenon, and every aspect of it may raise jurisdiction questions

Public law in Digital Reality	
Legal fields	**Examples of issues**
Financial and tax law	Where and how to pay taxes on revenues generated by digital reality – tax avoidance; taxation on sales in digital reality; cryptocurrencies; money transfer within digital reality
Criminal law	Cybercrimes against users or against the platform
Administrative law	Regulation of establishment and maintenance of digital reality; accounting the principles of application of artificial intelligence; transparency of the operations
Procedural laws	Proof of facts in digital reality in criminal or civil procedures

Mixed fields of law in Digital Reality	
Legal fields	**Examples of issues**
Consumer protection law	Effective mechanisms of complaints; dispute resolution mechanisms; mitigation against addiction; protection of younglings
Data protection law	The protection of every data generated in the digital reality; profiling of the users
Competition law	Cartels, merger control and monopoly of the service providers; abuse of dominant position by big service providers; unfair influence on decision making of consumers; unfair competition in the digital reality
Labor law	Employment in the digital reality; digital workplaces
Advertising law	Digital reality as an infinite commercial board; regulation and check of the cross-border commercials in the digital reality
Media- and entertainment law	Audiovisual media contents and their national requirements in the digital reality; e-sport in digital reality;

Based on the above lists, LoDR can be defined as a combination of various existing aspects of private and public law, or their intersection, that regulate the rights and obligations of users and service providers within and outside the digital world concerning their activities related to digital reality and establishes the legal framework for creating and maintaining such a digital reality. LoDR can be further supported by soft law instruments, such as development policies, codes of conduct, principles for developers, and best practice guides, which serve as detailed tools for implementing the otherwise abstract legal regulations.[25]

V. The Contractual Aspects of Digital Reality

The starting point of understanding LoDR is to comprehend the structure of legal relationships within digital reality. First, it is important to emphasize, that digital reality is an artificial construct. It does not exist without a service provider. While in the physical world, individuals can act independently according to their own will through the biomechanical processes of their bodies, this is impossible in digital reality. Every element of digital reality is created and provided by a service provider.

Legal relationships can be broadly categorized as absolute structure and relative structure. In an absolute structured legal relationship, there is one or a few known right holders and an unlimited number of unknown obligees, each with three negative obligations: to respect the right of the right holder, not to interfere with the exercise of that right, and to bear the exercise of that right. In contrast, relative structured relationships involve mutual rights and obligations between known and identified parties. In the physical world, human rights, personality rights, property rights, and intellectual property rights are examples of absolute rights (historically property is the archetype of them), which are granted by the law, and everyone has a legal obligation to respect them. Contractual relationships, on the other hand, have a relative structure; they bind only the contracting parties, who are exclusively entitled to the rights and obligations outlined in the contract. Contracts can be far more detailed than statutory law, and when parties cover their absolute rights within a contract, it can add many additional elements to their relationship. For example, while two individuals are legally obliged to respect each other's property and not violate it, if they enter into a lease contract, they will stipulate how, when, and to what extent the leased object can be used, and only certain breaches of contract will constitute a violation of property rights.

Considering the above principles, we must conclude that participation in any form of digital reality constitutes a contractual relationship between the user and the service provider. This relationship is governed primarily by the terms – usually general terms and conditions – provided by the service provider, and subsidiarily by the contract law of the applicable private law. Contract law should be interpreted broadly to include copyright law as well (especially rules of copyright licensing), as digital reality is always embodied in a software-created environment. Software licenses are typically governed by end-user license agreements (EULAs) between users and service providers, which are special types of general terms and conditions. In these agreements, the main service provided is access to and use of the software, while the user may (but not necessarily) be required to pay license fees and adhere to the rules of use.

Thus, the fundamental legal relationship in digital reality is contractual, what determines the application of many legal rules. In general, the special rules derogate general rules, where contracts are always more specific than the statutory law. However, there are limitations to contracts, particularly in cases of invalidity or other rules that do not permit deviation from the law. Hungarian private law is fundamentally based on the principle of contractual freedom, allowing parties to determine the contents of their contract. The parties may depart from the provisions relating to their rights and obligations with mutual consent, unless prohibited by the Civil Code.[26] This approach allows many of the questions highlighted in the above tables to be settled within the EULA, where the parties may agree on the boundaries of certain rights or even exclude the application of certain legal norms.

A few examples can briefly illustrate the mechanisms of this structure. One of the most discussed topics among legal researchers is virtual property. Generally, the recognition of property rights stems from human rights treaties (such as the Universal Declaration of Human Rights, the European Convention on Human Rights, and the International Covenant on Civil and Political Rights), which oblige member states to provide legal protection for property in their national constitutions. These rights are protected by criminal law and private law against any unlawful act. However, in a contractual relationship, the parties determine what is lawful within the framework of statutory law, and if certain aspects are not covered by statutory law, the parties can fully regulate them. If traditional property rights are not applicable to virtual items (as is the case in Hungary, where property rights can only exist for tangible things and, with certain exceptions, for intangible phenomena listed in the Civil Code), the parties may agree in the EULA to grant property-like rights to users for their virtual assets. However, these would create only contractual rights (a relative type of relationship) that bind only the contracting parties, rather than absolute rights, which would obligate everyone, as with traditional property. Therefore, a contractual analysis is always the first step in understanding the basic legal concept of digital reality. If there are no provisions in the contract regarding the 'property' rights of virtual items, then the analysis of the applicable civil law will determine the scope of possible legal assessment.

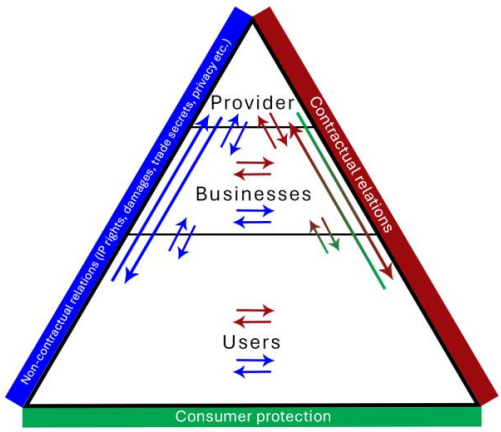
The situation is similar in the case of digital identity, secrets, and the private lives of users, as these exist only within the contractual framework of the given digital reality, albeit with respect for the unrestricted and inalienable core of fundamental rights.

The contractual relation between the user and the provider represents only one side of the coin. It is also crucial to evaluate the relationships among users, as various types of rights violations may occur in user-to-user interactions. Fundamentally, the structure is akin to that of any large social media platform. Users do not enter into contracts with each other; they merely accept the EULA. It is, of course, impossible to create contracts among every user. This distinction between user-provider and user-user relationships (which can be termed as user-to-provider/platform: U2P, and user-to-user: U2U relations) is significant. In digital reality, both U2P and U2U relations exist: U2P relations are governed by the EULA and, subsidiarily, by statutory law, whereas U2U relations are governed solely by the applicable statutory law.

EULAs, along with other policies or codes of conduct within digital reality, may serve as a bridge between U2P and U2U relations. These documents typically set forth requirements aimed at ensuring respect among users, such as prohibitions against hacking other users' profiles, sharing nudity or explicit violence, and hate speech, as well as similar ethical guidelines. These obligations are laid down within the U2P relationship but also have an impact on U2U relations. Dogmatically, these prohibitions and rules do not constitute a contractual relationship among users, so they cannot file claims against other users based on breach of contract. However, users may still file claims based on a breach of statutory law, if the law is applicable to the issue at hand in digital reality. In such cases, the violating party commits a breach of contract in the U2P relationship by failing to comply with the contractual obligation to respect other users' rights, as provided in the EULA or statutory law. Thus, violations of users' rights in U2U relations may also have consequences in U2P relations, where the provider may impose sanctions ranging from warnings to account deletion, or even take steps to initiate legal proceedings (e.g., in cases of criminal behavior).

Regulating digital reality, even through soft law instruments, plays an important role. Published guidelines, ethical principles, and best practices can motivate service providers to implement contractual measures that may prevent or restrict the violation of other users' rights.

As we delve deeper into the possibilities of digital reality, a more detailed structure with many variations emerges, where additional market actors provide built-in services (e.g., clothing shops where users can purchase items for their avatars, or professional users operating shops or restaurants within a franchise system in digital reality). These professional businesses form an additional layer in digital reality, creating further contractual relationships with users (termed as user-to-business: U2B relations) and with service providers (termed as business-to-provider: B2P relations). They may also have contractual or non-contractual relationships with each other (termed as business-to-business: B2B relations), adding complexity to the system of legal relations. Although professional businesses are also users in a sense, they often accept different EULAs than those accepted by common users. The following figure summarizes the possible structure of the legal relationships and their nature in the digital reality.



1. Figure Structure of the possible legal relations in the Digital Reality. Compiled by the author.

VI. The Cross-border Attribute of Digital Reality

Where is digital reality? Is it everywhere or nowhere? Given that legal systems are territorial and national entities (with the EU being regional), we must address the question of which law is applicable to the legal relationships described above? If the headquarter of the service provider is located in the United States of America, and its digital reality has millions of users worldwide, which law governs the functioning of this digital reality? In this context, it is also necessary to distinguish between U2P and U2U relationships, as the existence of a contract influences this question.

International private law in conflict of laws cases seeks to answer two key questions: which country has jurisdiction over a lawsuit, and which country's law will be applicable in the given case? The venue and the applicable law are crucial points in litigation concerning digital reality.

In U2P relationships, the service provider typically includes a jurisdiction clause in the terms and conditions, where the parties agree on the venue for litigation and the applicable law. In most cases, this jurisdiction is connected to the provider's home country, or in fewer cases to an independent country with flexible civil law (e.g., Switzerland), or to international arbitration courts. These options generally favor the provider, as a typical user is unlikely to file a lawsuit in a different country or at an international arbitration court due to the significant procedural and representative costs.

In this respect consumer protection regulations have to be considered, particularly in the European Union. It is crucial to determine whether EU law is applicable to the U2P relationship. In the EU the Regulation No. 1215/2012 of the European Parliament and of the Council on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters (hereinafter Brussels I.) regulates the jurisdiction, if there is an international element in the given case. If the provider of the digital reality is domiciled in EU, the Brussel I. applies. Domicile can be determined by statutory seat, central administration or principal place of business.[27] U2P EULAs are generally considered consumer contracts by nature (excluding cases where professional businesses use digital reality to enhance their services, as these fall under a different legal framework without consumer protection regulations), where the user usually is a natural person acting for purposes which are outside his trade, business or profession. Article 17. of Brussels I. establishes jurisdiction over consumer contracts. The regulation extends the concept of domicile, prescribing that if a consumer enters into a contract with a party not domiciled in a Member State but having a branch, agency, or other establishment in one of the Member States, that party shall be deemed domiciled in that Member State for disputes arising from the operations of the branch, agency, or establishment. In this case the user can bring proceedings against the service provider in the Member State where the provider is domiciled or shall be deemed to be domiciled, but what is more important, the user as a consumer has the right to file the lawsuit in the courts for the place where the user is domiciled.[28] The possibility of litigating in the home court is a fundamental consumer protection rule in the EU. Conversely, if the service provider wishes to sue the user as a consumer, proceedings may only be brought in the courts of the Member State where the consumer is domiciled.[29]

The provisions described above are quite strict. According to Article 19, these provisions may only be departed from under specific circumstances: (1) by an agreement entered into after the dispute has arisen; (2) by an agreement that allows the consumer to bring proceedings in courts other than those previously indicated; or (3) by an agreement entered into by the consumer and the other party to the contract, both of whom are domiciled or habitually resident in the same Member State at the time of the contract's conclusion, which confers jurisdiction on the courts of that Member State, provided that such an agreement is not contrary to the law of that Member State. Therefore, these provisions must be carefully considered when drafting the jurisdiction clause in EULAs.

If the service provider cannot be deemed domiciled in the EU, or if the user is not a consumer, the parties are generally free to agree on the jurisdiction.

In U2U relationships - if both users are domiciled in the EU – the Brussels I. sets the rules for jurisdiction. The general rule of jurisdiction is based on the domicile of the defendant. However, Article 7. provides for special jurisdiction, allowing a person to be sued in another Member State under certain conditions:

- in matters relating to tort, delict or quasi-delict: In the courts for the place where the harmful event occurred or may occur.
- Regarding a civil claim for damages or restitution which is based on an act giving rise to criminal proceedings: In the court seized of those proceedings, to the extent that that court has jurisdiction under its own law to entertain civil proceedings.

The above situations may arise in cases of rights violations in U2U relationships. If not all litigating users are domiciled in the EU, then the international private law of the relevant countries may provide jurisdiction rules; however, these suits are often not cost-effective.

The geographically unlimited nature of digital reality may undermine the protection of personality rights or property rights of users due to the complexity and expense of international litigation. Therefore, as a best practice, the author recommends incorporating an internal alternative dispute resolution (ADR) mechanism into digital reality specifically dedicated to U2U disputes. By accepting the EULA, users should also accept the jurisdiction of this ADR body, without prejudice to their right to litigate in real courts. This method would primarily be suitable for stopping ongoing violations, although monetary remedies might be beyond its capabilities.

Another important factor, alongside the venue of litigation, is the determination of the applicable law. If a user has a claim based on a breach of contract, violation of personality rights, or infringement of intellectual property rights, the applicable law will largely determine the potential outcomes of such claims. For example, the regulation and case law regarding personality rights or the recognition of virtual property can differ significantly between common law and civil law countries. Each legal system has its own unique characteristics, making it impossible to provide general answers to substantive legal questions concerning digital reality. As the saying goes, 'it always depends.' The results may vary from one legal system to another. Within the EU the Regulation No. 593/2008 of the European Parliament and of the Council on the law applicable to contractual obligations (hereinafter Rome I.) and the Regulation No. 864/2007 of the European Parliament and of the Council on the law applicable to non-contractual obligations (hereinafter Rome II.) govern these issues. While a comprehensive analysis of these regulations is beyond the scope of this article, it can generally be concluded that, by their nature, Rome I. is likely applicable to U2P relations involving contracts, whereas Rome II. may apply to U2U relations where no contracts exist among the users.

Rome I. establishes the principle of freedom of choice of law, and in the absence of such a choice, it provides provisions for determining the applicable law. The contract between the user and the service provider is atypical, combining elements from various types of contracts, but it falls under the scope of Rome I. According to Rome I, a contract for the provision of services is generally governed by the law of the country where the service provider has their habitual residence. However, if the user is a consumer, the contract shall be governed by the law of the country where the consumer resides, provided that the professional pursues their commercial or professional activities in the country where the consumer has his habitual residence, or by any means, directs such activities to that country or to several countries including that country and the contract falls within the scope of such activities.[30] Parties may choose the law applicable to a contract meeting these conditions, but such a choice cannot deprive the consumer of the protection afforded by provisions that cannot be derogated from by agreement under the law that would otherwise apply in the absence of choice.

Contracts in U2B, B2B, and B2P relationships must also be categorized, as they may be governed by different principles under Rome I. For example, franchise contracts in digital reality are generally governed by the law of the country where the franchisee has their habitual residence, while contracts that provide essential access to and use of digital reality may be governed by different laws.

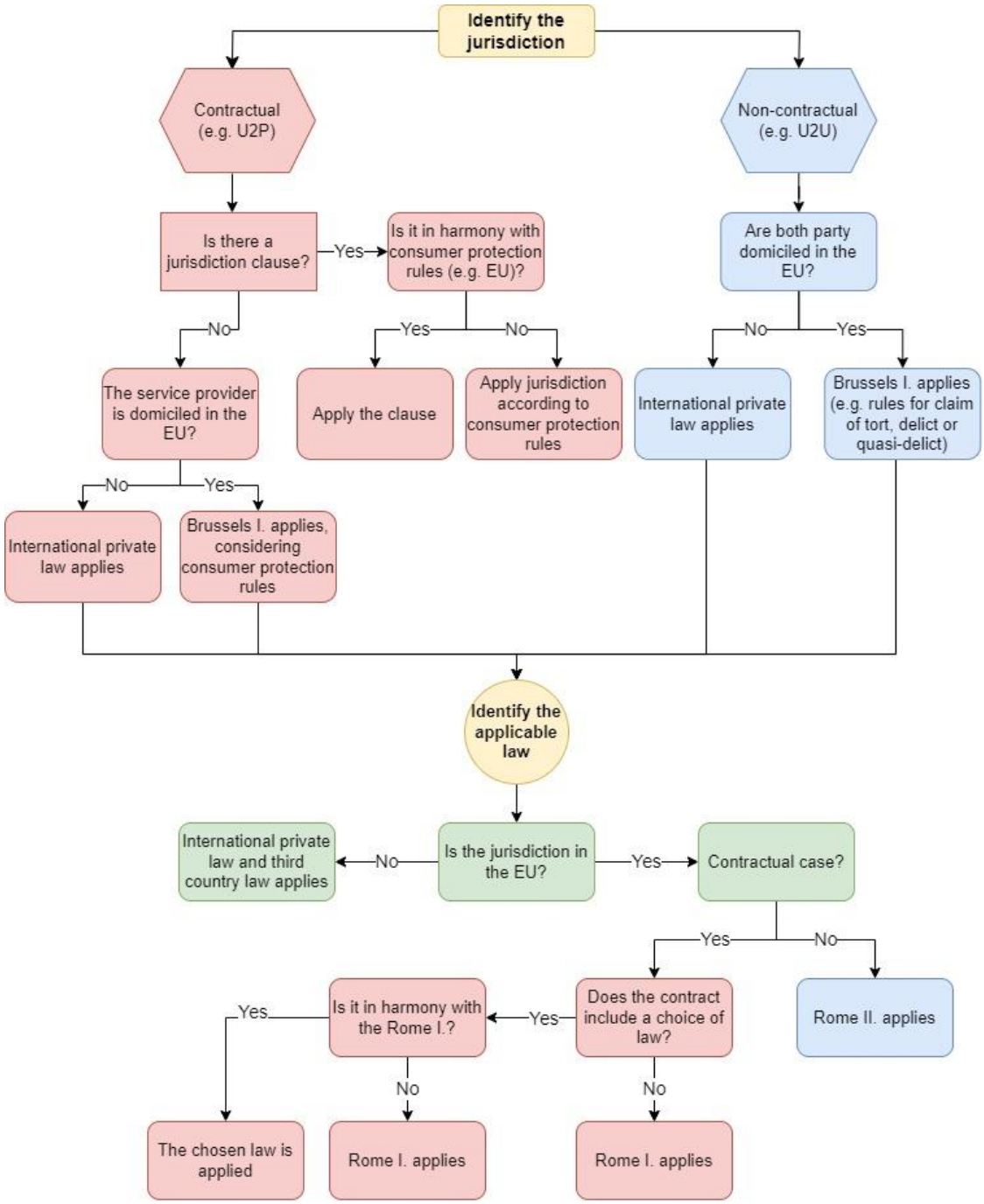
Rome II. provides provisions for determining the applicable law in cases involving torts, unfair competition, or infringement of intellectual property rights, among others. Many of these rules are challenging to interpret in the context of digital reality, and case law is needed to apply them effectively to the Internet. Issues such as the location of damage, unfair competition in digital reality, and the territorial nature of intellectual property rights raise several complex questions regarding digital reality.

VII. Conclusion

In the past two decades, numerous studies have explored the questions surrounding virtual reality, particularly the concept of virtual property. This paper aims to revisit the foundational issues, as even at the starting point, there are essential questions that must be addressed to advance our understanding. It is crucial to map the possible types of legal relationships, understand their nature, and identify the applicable laws that will govern these relations. Digital reality is continuously evolving. From the early stages of virtual and augmented reality, technology has advanced significantly. If metaverses like Meta are successfully launched, the legal relationships within the digital world will exponentially multiply, potentially replicating the full complexity of real life in digital reality.

Policymakers should work towards establishing clear legal definitions for various assets within digital reality, such as social media accounts, virtual property, and digital identities. The lack of consistent terminology and legal recognition across jurisdictions can lead to uncertainty and hinder the protection of users' rights. Establishing these definitions in legislation will provide a solid foundation for addressing disputes and managing digital assets effectively. Legal frameworks should incorporate enhanced dispute resolution mechanisms that are accessible and efficient for resolving conflicts in digital reality. This could include specialized digital courts or alternative dispute resolution (ADR) methods designed to handle the unique challenges of virtual interactions.

This article provides a basic scheme for legal relations and applicable legal systems in order to support the further exploration of digital reality.



2. Figure Flowchart of identifying jurisdiction and applicable law related to Digital Realities. Compiled by the author.

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