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Digital objects as a new type of civil rights objects: Theoretical aspects and classification criteria

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Abstract
The study aimed to provide a comprehensive analysis of the legal nature of digital objects as a new type of civil rights object and to develop the theoretical framework for their effective legal regulation in the context of the digital transformation of society. The methodological basis of the study was the comparative legal method for analysing approaches to the regulation of digital objects in the legal systems of China, Switzerland, Germany, Japan, Singapore and the USA, the formal legal method for studying current Ukrainian legislation, and the systemic analysis for studying digital objects as a complex phenomenon. The study established that digital objects are a unique legal phenomenon which does not fully fit into classical civil law constructs and requires a special legal regime. The study revealed the fragmented and contradictory nature of Ukrainian legal regulation, in particular, systemic conflicts between the general property regime of a digital object in the Civil Code of Ukraine and the special regime of a virtual asset in the relevant law. The study proved the problematic nature of applying the legal fiction of extending property rights to intangible objects, which creates legal uncertainty and complicates law enforcement. An analysis of court practice has revealed practical difficulties in applying the current legislation, in particular when seizing cryptocurrencies as material evidence in criminal proceedings. The study substantiated the need to revise the approach by abandoning the fiction of a digital object and creating an independent category of digital assets with a special legal regime. The practical value of the study is determined by the creation of a theoretical basis for improving the legal regulation of digital objects and the possibility of using the results in lawmaking, law enforcement practice and further research

Keywords:
custody services; virtual asset; tokens; blockchain; transactions

Introduction

The research relevance is determined by the legal nature of digital objects, due to fundamental changes in economic relations caused by the digital transformation of society, which generates fundamentally new forms of value without analogues in the traditional legal system. The rapid growth in the volume of transactions with cryptocurrencies, non-fungible tokens and other digital assets amid the exponential development of the global digital asset market, the spread of tokenisation of property rights, the development of

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blockchain technologies and the emergence of decentralised autonomous organisations creates a critical need for effective legal regulation to protect participants in civil turnover and ensure the stability of economic relations. At the same time, the problem is that legal systems are unprepared to regulate objects that exist exclusively in the virtual space and have unique properties not inherent in traditional goods, which, combined with the lack of unified international approaches to the regulation of digital objects, requires a different approach to the basic categories of civil law and the development of scientifically sound theoretical foundations for the legal qualification of digital objects and the determination of adequate legal regimes.

The problem of tokenisation of property rights turned out to be much more complicated than the simple transfer of traditional legal structures to the digital environment, as proved by R.M. Garcia-Teruel & H. Simón-Moreno (2021) in the comparative study of European and American practices analysed the peculiarities of legal regulation of digital assets in different jurisdictions and identified specific challenges associated with adapting existing legal frameworks to new technological realities. The researchers examined the correlation between traditional legal institutions and innovative forms of digital assets, focusing on the need for more flexible approaches to legal regulation. The issue of the legal qualification of tokens as objects of civil rights was studied by J.M. Moringiello & C.K. Odinet (2022) in an analysis of the difficulties of applying traditional legal categories to digital assets. The study considered the problem of determining the legal nature of tokens in the context of existing legal systems and drew attention to the need to rethink approaches to the regulation of digital objects. The study highlights the importance of adapting legal mechanisms to the specific characteristics of digital assets to ensure effective legal protection of the interests of owners. The conclusions regarding the inadequacy of blockchain technology regulation exclusively through the prism of securities law were confirmed by M. Kiskis (2024). The study proved that current attempts to regulate blockchain, which consider crypto tokens and digital assets only as securities, currencies or their derivatives, have a fundamental limitation – they are unable to incorporate the various legal rights, obligations and assets that blockchain technology can virtually reproduce. The researcher emphasised that a regulatory approach focused exclusively on public law ignores the full potential of blockchain technology and risks stifling innovation and practical applications.

In the Ukrainian scientific discourse, the terminological ambiguity between virtual and digital assets has long remained a source of legal confusion until the publication of a study by O. Dmytryk (2021). The study not only identified the roots of the problem in the imperfection of legislative definitions but also developed criteria for distinguishing between these concepts based on technological properties and economic functions. The issue of the legal nature of digital assets was studied by I.Yu. Guleykov (2025). The study defined digital assets as atypical objects of civil law, the legal nature of which still lacks unity of approach in legal doctrine. The finding that Ukraine currently lacks clear legal regulation of relations relating to digital assets, which naturally creates legal uncertainty in the course of concluding and performing transactions with digital assets, is notable. The study has developed a comprehensive classification of digital assets according to five criteria: property, axiological, functional, technological and depending on their use in civil circulation. E. Michurin (2022) studied the trends in the legal regulation of digital technology objects, identifying three main approaches to their study: technocratic, comprehensive and special legal. The study analysed in detail the special legal approach, which includes public law and private law, as well as the study of digital technologies as objects of intellectual property rights. Legal terminology, in particular, the correlation of the concepts of "virtual assets", "virtual goods", "digital objects" and "objects of digital technologies", was emphasised, and the study substantiates the expediency of using the term "virtual good" in private law instead of the economic term "virtual asset". The study proved that the concept of property rights can be applied to the legal regulation of digital technology objects, suggesting that the actual owner of a digital technology object is a person who has the right to access it through authentication and verification.

At the same time, despite a considerable amount of research, the issues of systematisation of digital objects (things) and determination of the most effective approaches to their legal regulation in the current environment remain insufficiently studied. In particular, the aspects of the correlation between different legal regimes of digital objects, the mechanisms of their integration into the traditional system of civil rights objects, and the peculiarities of applying classical civil law constructs to intangible goods require in-depth analysis. In addition, additional research is required to determine the legal nature of digital objects as a special type of civil rights objects, to develop criteria for their classification with due regard for technical and economic features, to analyse the effectiveness of different approaches to legal regulation based on a comparative study, and to justify the need to create a special legal regime for digital objects instead of extending traditional legal constructs to them.

The study aimed to form a scientific basis for optimising the legal regime of digital objects. To achieve this goal, the following tasks were set: to analyse the views on the legal nature and criteria for classification of digital objects; to analyse the current legislative regulation of digital objects in Ukraine; to substantiate the need for a special legal regime for digital objects.

Materials and Methods

A primary method of research was the comparative legal method, which was used to analyse approaches to the regulation of digital objects in different legal systems of the world, in particular in China, Switzerland, Germany, Japan, Singapore and the United States. This method was used to identify common trends and differences in legal regulation, as well as to assess the effectiveness of various regulatory models for their potential adaptation in the Ukrainian legal environment. The formal legal method was used for a detailed analysis of the current Ukrainian legislation, including the provisions of the Civil Code of Ukraine[1] and Law of Ukraine No. 2074-IX "On Virtual Assets"[2]. The provisions of Law of Ukraine No. 3321-IX "On Digital Content and Digital Services"[3] and Law of Ukraine No. 361-IX "On Prevention and Counteraction to Legalisation (Laundering) of Criminal Proceedings, Terrorist Financing and Financing of Proliferation of Weapons of Mass Destruction"[4] were also studied. This method identified systemic conflicts and gaps in legal regulation, as well as analysed internal contradictions between different legal acts.

The system analysis was used to study digital objects as a complex legal phenomenon that requires consideration of technical, economic and legal aspects of their functioning. This approach was used to develop a multidimensional classification of digital objects and identify the interrelationships between different legal regimes applied to them in Ukrainian legislation. The legal framework of the study was based on national and international legal acts regulating relations in the field of digital technologies, in particular Regulation of the European Parliament and of the Council No. 2024/1624 "On the Prevention of the Use of the Financial System for the Purposes of Money Laundering or Terrorist Financing (Text with EEA relevance)"[5], Federal Act of Switzerland "On the Adaptation of Federal Law to Developments in Distributed Electronic Register Technology"[6]. The study also analysed US regulations, including the Commodity Futures Trading Commission orders (CFTC, 2015) and the Securities Act of 1933[7].

The empirical basis of the study was the case law, including the decisions of Ukrainian courts in cases related to digital assets. In particular, the Decision in case No. 991/1512/23[8], the Judgement of the Shepetivka City District Court of Khmelnytskyi Region in Case No. 688/3758/23[9] and the Decision on the seizure of property in Case No. 752/7557/22[10] were analysed. The provisions of the Civil Procedure Code of Ukraine[11] are additionally considered. The analysis of court practice has revealed practical problems of application of the current legislation and demonstrated the consequences of theoretical contradictions in the legal regulation of digital objects.

Results

Conceptual framework and conceptual foundations of digital objects. The first and most obvious sign of the crisis in the legal regulation of relations in the digital sphere is the lack of a unified and consistent terminology. Both scientific doctrine and legislation use a large number of different, often synonymous or partially overlapping terms to refer to objects existing in the digital environment. Among them are such terms as "digital objects", "virtual assets", "digital assets", "cryptoassets", "virtual goods", "digital objects", etc. Such terminological diversity is not a purely linguistic problem; it is a direct consequence of the lack of a unified concept and a coherent approach to research of the legal nature of these phenomena. Each term carries a certain conceptual charge, reflecting the attempt of a legislator or scholar to fit a new phenomenon into a certain, already known legal framework, which, as will be shown below, is not always successful.

The "digital object" is a concept introduced by Law of Ukraine No. 3320-IX[12]. According to the new Article

[1] Civil Code of Ukraine. (2003, January). Retrieved from https://zakon.rada.gov.ua/laws/show/435-15.
[2] Law of Ukraine No. 2074-IX "On Virtual Assets". (2022, February). Retrieved from https://zakon.rada.gov.ua/laws/show/2074-20.
[3] Law of Ukraine No. 3321-IX "On Digital Content and Digital Services". (2023, August). Retrieved from https://zakon.rada.gov.ua/laws/show/3321-20#Text.
[4] Law of Ukraine No. 361-IX "On Prevention and Counteraction to Legalisation (Laundering) of Criminal Proceeds, Terrorist Financing and Financing of Proliferation of Weapons of Mass Destruction". (2019, December). Retrieved from https://zakon.rada.gov.ua/laws/show/en/361-20.
[5] Regulation of the European Parliament and of the Council No. 2024/1624 "On the Prevention of the Use of the Financial System for the Purposes of Money Laundering or Terrorist Financing (Text with EEA relevance)". (2024, May). Retrieved from https://eur-lex.europa.eu/eli/reg/2024/1624/oj.
[6] Federal Act of Switzerland "On the Adaptation of Federal Law to Developments in Distributed Electronic Register Technology". (2021, February). Retrieved from https://www.bk.admin.ch/ch/d/pore/rf/cr/2019/20192205.html.
[7] Securities Act of the USA. (1933). Retrieved from https://www.govinfo.gov/content/pkg/COMPS-1884/pdf/COMPS-1884.pdf.
[8] Judgement of the High Anti-Corruption Court of Ukraine in Case No. 991/1512/23. (2023, June). Retrieved from https://reyestr.court.gov.ua/Review/111590400.
[9] Judgement of the Shepetivka City District Court of Khmelnytskyi Region in Case No. 688/3758/23. (2023, December). Retrieved from https://reyestr.court.gov.ua/Review/115427588.
[10] Judgement of the Holosiivskyi District Court of Kyiv in Case No. 752/7557/22. (2022, November). Retrieved from https://reyestr.court.gov.ua/Review/107216946.
[11] Civil Procedural Code of Ukraine. (2004, March). Retrieved from https://zakon.rada.gov.ua/laws/show/en/1618-15#Text.
[12] Law of Ukraine No. 3320-IX "On Amendments to the Civil Code of Ukraine Regarding the Expansion of the Scope of Civil Rights". (2023, August). Retrieved from https://zakon.rada.gov.ua/laws/show/3320-%D0%86%D0%A5#Text.

179-1 of the Civil Code of Ukraine[1], a digital object is "a good that is created and exists exclusively in the digital environment and has property value"[2]. This category is generic, as part 2 of the same Article explicitly states that a digital object is a virtual asset, digital content and other goods (Neskorodzhena *et al.*, 2024; Zozulyak & Maksymiv, 2024). The key and most controversial aspect of this novelty is the extension to digital objects of the legal regime of things "unless otherwise provided... by law or follows from the essence of the digital object". This approach, based on a legal fiction, has been the subject of fundamental criticism by a large part of the legal community (Slipchenko & Slipchenko, 2024a).

The "virtual asset" is the central concept of the special Law of Ukraine No. 2074-IX[3]. According to Article 1 of this Law, a virtual asset is an "intangible good that is an object of civil rights, has a value and is expressed by a set of data in electronic form". At the same time, a different definition is contained in Law of Ukraine No. 361-IX, where a virtual asset is defined as "a digital expression of value that can be traded in a digital format or transferred and can be used for payment or investment purposes". This ambiguity creates a direct conflict, as Law of Ukraine No. 2074-IX in Article 4 explicitly prohibits the use of virtual assets as a means of payment in Ukraine (Pochynok, 2023).

The "digital content" is a concept defined in Law of Ukraine No. 3321-IX[4]. According to this act, digital content is "data created and provided in digital form", which includes computer programs, applications, video files, audio files, music files, digital games and e-books. The classification of digital content as "digital objects" in the Civil Code of Ukraine[5] is controversial, as most of such objects are the results of intellectual and creative activity and are protected by copyright, which provides for a completely different legal regime than property law (Trofymenko & Fedorenko, 2022).

The debate on the correlation of these concepts in the scientific doctrine also has no common denominator. The scientific literature lacks a unified approach to the correlation between the terms "digital assets" and "virtual assets". O. Dmytryk (2021) proposes to distinguish between them, considering "digital assets" as a broader concept that covers any benefits in digital form that have a real financial value, while "virtual assets" exist mainly in the virtual world (for example, game items) and may not have a direct link to real value. The legislative construction of the Civil Code of Ukraine, where "digital object" is a generic term for "virtual asset", adds another layer of complexity to this terminological confusion.

For further analysis, it is necessary to consider specific types of digital objects that have already become an integral part of the digital economy. Cryptocurrencies (e.g., Bitcoin, Ethereum) are decentralised, fungible tokens that operate on a distributed ledger technology (blockchain). Their legal nature is one of the most difficult to qualify. On the one hand, they are not money or currency values within the meaning of Ukrainian law. On the other hand, they de facto perform some of the functions of money, in particular, as a means of exchange and accumulation of value. The prevailing approach in legal doctrine and court practice is to qualify them as a specific type of property (goods) that can be the subject of sale and exchange agreements.

Tokens are accounts in a distributed ledger that can represent a variety of rights and values. Their legal nature is determined by the function they perform. Payment tokens are similar in purpose to cryptocurrencies and are used as a means of payment between users (Lawrange, n.d.). Security/Investment tokens certify rights similar to those arising from traditional securities, for example, the right to receive a portion of the profit, the right to participate in the management of the company. Ukrainian legislation does not yet contain clear criteria for such qualification. Service/Utility tokens give their holder the right to access a specific product or service within a particular digital platform or ecosystem (Shapovalova, 2024). Governance tokens give the right to vote in decision-making on the development of a decentralised project, protocol, or decentralised autonomous organisation (DAO). NFTs, or non-fungible tokens, are unique records in the blockchain that confirm the authenticity and right of control over a certain, usually digital, object (Klyan & Selivakin, 2023). The key legal issue related to NFTs is the relationship between the rights to the token itself and the rights to the underlying object that it "tokenises" (e.g., a digital work of art, music file, game item). The acquisition of an NFT does not, by default, imply the transfer of copyright or any other exclusive rights to the underlying object, unless expressly provided for in the terms of the transaction.

Despite the diversity of digital objects, in the process of analysing them, several common, inherent features and properties can be identified that determine their specificity as objects of civil rights. First, it is worth noting the intangible nature of all digital objects, as they lack physical, corporeal substance and exist in the

[1] Civil Code of Ukraine. (2003, January). Retrieved from https://zakon.rada.gov.ua/laws/show/435-15.
[2] Law of Ukraine No. 361-IX "On Prevention and Counteraction to Legalisation (Laundering) of Criminal Proceeds, Terrorist Financing and Financing of Proliferation of Weapons of Mass Destruction". (2019, December). Retrieved from https://zakon.rada.gov.ua/laws/show/en/361-20.
[3] Law of Ukraine No. 2074-IX "On Virtual Assets". (2022, February). Retrieved from https://zakon.rada.gov.ua/laws/show/2074-20.
[4] Law of Ukraine No. 3321-IX "On Digital Content and Digital Services". (2023, August). Retrieved from https://zakon.rada.gov.ua/laws/show/3321-20#Text.
[5] Civil Code of Ukraine. (2003, January). Retrieved from https://zakon.rada.gov.ua/laws/show/435-15.

form of data or software code (Guleykov, 2025). Closely related to this feature is the property of existence in the digital environment, as such objects are created, exist, circulate and cease to exist exclusively within the digital environment, which is defined as a set of hardware, software and network connections. A substantial characteristic of digital objects is their property value, which is manifested in the ability to meet certain needs of participants in civil circulation (investment, consumer, gaming, etc.) and have a value equivalent, which is usually determined by market supply and demand (Michurin, 2022). This feature is directly correlated with the property of negotiability, due to which digital objects can be the subject of various civil law transactions: sale and purchase, exchange, gift, inheritance, etc. Finally, a characteristic feature of digital objects is their controllability, which is the ability to establish dominance over such an object, which is usually realised through the possession of a unique set of cryptographic data, a private key that provides access to the asset and the ability to dispose of it (Neskorodzhena *et al.*, 2024; Zozulyak & Maksymiv, 2024).

An analysis of the conceptual framework reveals a fundamental obstacle to the development of adequate legal regulation. Ukrainian legislation has simultaneously introduced two parallel and partially contradictory concepts: the broad category of "digital object" in the Civil Code of Ukraine[1] and the more specialised, but not fully correlate, concept of "virtual asset" in the relevant Law of Ukraine No. 2074-IX[2]. The Civil Code of Ukraine attempts to apply a universal, but outdated, property-law approach to all digital objects, extending the regime of objects to them. At the same time, the special Law of Ukraine No. 2074-IX creates a special regime, but it itself contains internal contradictions (for example, regarding the payment function, as noted by V.O. Yarotsky (2023)) and, most notable, is not effective due to the lack of tax regulation (Shapovalova, 2024). The consequences of such uncertainty exceed the scope of theoretical debates. They paralyse the development of the legal market, scare away investors, make adequate judicial protection impossible, and create a grey area conducive to fraud and money laundering. Thus, the problem lies not so much in the terminology as in the lack of a unified state policy and a coherent legal strategy for digital assets.

The legal nature of digital objects in the doctrine of civil law. The emergence and rapid proliferation of digital objects has raised a fundamental question for the civil law doctrine about their place in the traditional system of civil rights objects enshrined in Article 177 of the Civil Code of Ukraine[3]. This system, which includes things, property, property rights, results of intellectual and creative activity, information and other tangible and intangible goods, was not ready to integrate such atypical phenomena (Guleykov, 2025). The main academic debate has revolved around the dilemma of whether digital objects can be qualified within one of the existing categories, perhaps through an expansive interpretation or the use of legal fictions, or whether they are objects of a completely new, special kind (*sui generis*), requiring the creation of their own, unique legal regime.

The most widespread and, at the same time, most criticised in civil law is the proprietary concept, which proposes to extend the legal regime of things to digital objects, and, therefore, the key institution of property law – the right of ownership with its classical triad of powers (possession, use, disposal). E. Michurin (2025) substantiated the pragmatism of the proprietary approach, which mitigates the need to create a new complex system from scratch, instead employing the institutions of property law already developed over the centuries to regulate the circulation and, most notably, protect the rights to digital assets. The study also highlighted the economic similarity of digital objects to things: they have value, are individually identifiable (such as NFTs) or generic (such as cryptocurrencies), can be alienated and are under the exclusive control of one person.

At the same time, the criticism of the proprietary concept is much weightier and more systemic. The main counterargument lies in a fundamental conceptual contradiction: property rights as an absolute right are historically, doctrinally and inherently associated with material, corporeal objects over which physical domination is possible (Slipchenko & Slipchenko, 2024b). Calling an incorporeal good that is a collection of data an "object" means resorting to a legal fiction that creates terminological confusion and logical contradictions (Neskorodzhena *et al.*, 2024; Zozulyak & Maksymiv, 2024). The legal regime of an object does not consider the key specifics of digital objects: their intangibility, ease of copying, cross-border nature, impossibility of physical destruction or damage, and close connection with intellectual property law (Slipchenko & Slipchenko, 2024a). This creates practical legal uncertainty, in particular in the application of a vindication claim (reclamation of an object from someone else's illegal possession) to stolen cryptocurrency or a negator claim (removal of obstacles to use) to NFTs. The concept of intellectual property rights is most relevant to objects such as digital content and NFTs. It is based on the fact that the token or file itself is only a form of embodiment of the copyright object (work), and accordingly, the rights to it should be regulated not by the law of property, but by intellectual property law (Zerov, 2023).

[1] Civil Code of Ukraine. (2003, January). Retrieved from https://zakon.rada.gov.ua/laws/show/435-15.
[2] Law of Ukraine No. 2074-IX "On Virtual Assets". (2022, February). Retrieved from https://zakon.rada.gov.ua/laws/show/2074-20.
[3] Law of Ukraine No. 3320-IX "On Amendments to the Civil Code of Ukraine Regarding the Expansion of the Scope of Civil Rights". (2023, August). Retrieved from https://zakon.rada.gov.ua/laws/show/3320-%D0%86%D0%A5#Text.

The concept of *sui generis* appears as the most scientifically sound, as it recognises the uniqueness of digital objects as a legal phenomenon that cannot be fit into any of the existing categories without distortion. Therefore, they require the creation of a special, separate legal regime that would organically combine elements of property (exclusive control), obligatory (relations within the system) and exclusive rights (protection against unauthorised copying and use). Regardless of the chosen concept, digital objects are already integrated into civil circulation and interact with traditional legal institutions. Property rights in Ukraine are enforced through the fiction of a "digital object", with the key element of the ownership triad being associated not with physical dominance but with technical control over the private key to access the asset (Neskorodzhena *et al.*, 2024; Zozulyak & Maksymiv, 2024).

Inheritance is one of the most problematic areas, as the transfer of digital assets to inheritance is complicated by both technical (the need for heirs to have access to the testator's private keys) and legal (problems with the identification and valuation of assets by a notary, the lack of a clear procedure for their inclusion in the estate) aspects. The possibility of pledging digital assets remains controversial and directly depends on their legal qualification. If they are defined as property, then such a possibility exists, but the mechanisms for the implementation of the pledge (for example, foreclosure) are not developed (Klyan & Selivakin, 2023). The circulation of digital objects mainly takes place based on traditional contractual structures: sale and purchase, exchange, provision of services (for example, crypto-exchange services) (Guleykov, 2025). The doctrinal conflict that has arisen around the legal nature of digital objects goes beyond a purely academic dispute. The choice of the proprietary model ("digital object") has become a source of real and acute problems in law enforcement practice (Slipchenko & Slipchenko, 2024a). However, the Civil Procedure Code of Ukraine[1] defines material evidence as a tangible object that has retained traces of a crime.

Cryptocurrencies are intangible in nature and cannot meet this criterion in the classical sense, which creates an insoluble conflict. As a result, the courts are forced to either refuse to seize the assets, leaving the victims without any real protection, or resort to a "creative" interpretation of the law, as the High Anti-Corruption Court did, by seizing the assets not as material evidence but to secure future confiscation of property. This decision sets an significant precedent, but does not solve the systemic problem. This example demonstrates how a theoretically wrong choice (the use of an unsuccessful legal fiction) directly leads to the practical impossibility of effective and predictable justice.

Classification criteria and digital object system. The classification of digital objects determines approaches to their legal regulation and influences the formation of differentiated legal regimes. It is impossible to apply the same legal regime to the cryptocurrency Bitcoin, which serves as a medium of exchange, to an NFT that certifies the uniqueness of a work of art, and to a token that grants the right to vote in a decentralised autonomous organisation. An effective classification should be based on a system of criteria that considers not only the legal but also the technical and economic nature of these objects (Guleykov, 2025). This will avoid overgeneralisation and the development of a special legal regime for each significant group of digital goods. Table 1 demonstrates systematised main types of digital objects and analysis of their legal status in the Ukrainian jurisdiction.

Table 1. Classification of digital objects by legal nature

Object type	Subtype	Examples	Legal regime	Legislative framework
Crypto assets	Unsecured	Bitcoin, Ethereum	Virtual asset	Law of Ukraine No. 2074-IX[2] (not yet in effect)
	Secured	Asset tokens	Virtual asset	Law of Ukraine No. 2074-IX (not yet in effect)
Digital content	Entertainment	Video, music, games	Data/copyright	Civil Code of Ukraine[3] and Civil Procedural Code of Ukraine[4]
	Software	Software, applications	Data/copyright	Civil Code of Ukraine and Civil Procedural Code of Ukraine
NFT	Art	Digital paintings	Digital object	Civil Code of Ukraine
	Collectables	Cards, items	Digital object	Civil Code of Ukraine

Source: compiled by the author based on R.V. Popov (2024) and E. Michurin (2025)

[1] Civil Procedural Code of Ukraine. (2004, March). Retrieved from https://zakon.rada.gov.ua/laws/show/en/1618-15#Text.
[2] Law of Ukraine No. 2074-IX "On Virtual Assets". (2022, February). Retrieved from https://zakon.rada.gov.ua/laws/show/2074-20.
[3] Civil Code of Ukraine. (2003, January). Retrieved from https://zakon.rada.gov.ua/laws/show/435-15.
[4] Civil Procedural Code of Ukraine. (2004, March). Retrieved from https://zakon.rada.gov.ua/laws/show/en/1618-15#Text.

This classification reveals critical gaps in the legal regulation of digital objects in Ukraine. The most problematic is the situation with cryptoassets, the legal status of which remains uncertain due to the failure to enact a specialised law, which creates legal uncertainty in the areas of taxation, inheritance and criminal liability. Digital content is regulated mainly through the prism of copyright, which does not always adequately reflect the economic nature of such objects, especially in the context of their use as investment instruments or means of payment. NFTs represent a special category, as their legal qualification as "digital objects" under the Civil Code of Ukraine contradicts traditional civil law concepts of property law and creates difficulties in applying property, contractual and consumer protection rules. This inconsistency indicates the need for a comprehensive review of legislative approaches and the creation of a unified conceptual framework for the regulation of all types of digital assets, incorporating their technological features and economic function in the modern digital economy.

The current legislation of Ukraine, albeit fragmented, has already laid the foundations for the primary classification of digital objects based on their legal regime. At the highest level, in accordance with the Civil Code of Ukraine[1], they are all grouped under the generic category of "digital objects". The first group includes virtual assets, the legal regime of which should be determined by a special Law of Ukraine No. 2074-IX[2]. The second group covers digital content, which is regulated by special Law of Ukraine No. 3321-IX[3]. The third group is the category of other goods with an open list, which theoretically includes such objects as domain names, accounts in social networks and other online services that also exist in the digital environment and have property value. The VA Law offers a more detailed internal classification of virtual assets based on their economic substance and the existence of a connection with other civil rights objects. The first criterion is based on the availability of collateral, which distinguishes between unsecured virtual assets that do not certify any property or other rights of their owner against any third party. Their value is based solely on the trust of system participants and market demand, with cryptocurrencies such as Bitcoin being a classic example (Pochynok, 2023).

In contrast, secured virtual assets certify property rights, in particular, the rights of their owner to claim against the issuer or other obligated person in respect of another, basic object of civil rights (Zerov, 2023). The second criterion applied to secured VAs differentiates them depending on the type of collateral. Financial virtual assets constitute a specific category of secured VAs that certify rights to financial instruments and are divided into secured virtual assets collateralised by currency values (SVAs) and secured virtual assets collateralised by a security or derivative financial instrument (SVAs)[4]. Alongside them, there are non-financial virtual assets that are collateralised by other goods, such as real estate, goods or services.

International practice, in particular Regulation of the European Parliament and of the Council No. 2024/1624[5] and the approaches of the Swiss regulator, the Swiss Financial Market Supervisory Authority (FINMA), offer a classification based not on formal legal structures, but on the economic function performed by the token (FINMA, n.d.; FINMA publishes guidelines..., 2018). This approach is more flexible and adequate to the essence of the phenomenon, distinguishing payment tokens (Payment/E-money tokens), the main purpose of which is to function as a means of exchange and payment, including classic cryptocurrencies and stablecoins (Shapovalova, 2024; Kostyuchenko, 2021). Investment tokens or asset-referenced tokens are characterised by the fact that they are purchased for investment purposes, provide rights similar to those of securities (to profit, to a share in an asset), or their value is tied to a basket of other assets, such as currencies or commodities. Service or Utility tokens provide their holder with digital access to certain goods or services provided by the issuer on its platform (Shapovalova, 2024).

In a technical context, all tokens that exist based on blockchain technology can be differentiated into two broad groups depending on their fungibility. Fungible tokens are characterised by the fact that each unit is identical, indivisible and equivalent to any other unit of the same type, as in the case of Bitcoin, where one token is indistinguishable from another. Non-Fungible (NFT) tokens are the opposite in nature, as each one is unique, has individual characteristics recorded in its metadata, and cannot be replaced by another similar token. It is this uniqueness that determines their value in areas such as digital art, collectables, and gaming (Klyan & Selivakin, 2023).

The analysis of the criteria for classification of digital objects demonstrates the complexity and multidimensionality of this legal phenomenon, which requires an integrated approach to systematisation. The author establishes that an effective classification should be

[1] Civil Code of Ukraine. (2003, January). Retrieved from https://zakon.rada.gov.ua/laws/show/435-15.
[2] Law of Ukraine No. 2074-IX "On Virtual Assets". (2022, February). Retrieved from https://zakon.rada.gov.ua/laws/show/2074-20.
[3] Law of Ukraine No. 3321-IX "On Digital Content and Digital Services". (2023, August). Retrieved from https://zakon.rada.gov.ua/laws/show/3321-20#Text.
[4] Law of Ukraine No. 2074-IX "On Virtual Assets". (2022, February). Retrieved from https://zakon.rada.gov.ua/laws/show/2074-20.
[5] Regulation of the European Parliament and of the Council No. 2024/1624 "On the Prevention of the Use of the Financial System for the Purposes of Money Laundering or Terrorist Financing (Text with EEA relevance)". (2024, May). Retrieved from https://eur-lex.europa.eu/eli/reg/2024/1624/oj.

based on a combination of technical properties (interchangeability, decentralisation), economic functions (payment, investment, utilitarian) and legal regimes, rather than on formal legal constructs.

Digital objects in Ukrainian law: Regulatory analysis and issues. A key step in the attempt to integrate digital objects into Ukraine's legal system was the amendment to the Civil Code of Ukraine[1] in 2023, which supplemented Article 177 with a reference to "digital objects" alongside tangible objects and introduced a legal definition in a new Article 179-1. The most significant and at the same time problematic provision is part 2 of Article 179-1, which extends the legal regime of objects to digital objects on a residual basis. This decision is a legal fiction that equates intangible goods with tangible objects, ignoring the fundamental differences between them and creating logical obstacles to law enforcement, in particular in terms of the application of property rights remedies (Slipchenko & Slipchenko, 2024a).

Law of Ukraine No. 2074-IX[2], adopted in February 2022, was the first attempt to comprehensively regulate the virtual asset market in Ukraine, defining the legal status of virtual assets as intangible goods and objects of civil rights, introducing a classification into secured and unsecured assets, establishing the principles of service providers' activities, and defining the powers of state regulators (Hrytsay, 2022). However, the key problem is that the law has not yet entered into force due to the lack of adopted amendments to the Tax Code on taxation of transactions with virtual assets, which creates a paradoxical situation of "deferred regulation" (Shapovalova, 2024).

In addition to these basic acts, relations in the digital sphere are regulated by Law of Ukraine No. 3321-IX[3], which establishes rules for contractual relations regarding the provision of digital content to consumers based on European directives, emphasising the obligation aspects, which conflict with the property-based approach of the Civil Code of Ukraine, as well as Law of Ukraine No. 361-IX, which establishes the status of primary financial monitoring entities for virtual asset service providers and uses specific definition of a virtual asset, which differs from the relevant law.

The diversity of digital objects and the absence of a unified classification system necessitate the systematisation of the criteria for their legal qualification. To develop a comprehensive approach to regulation, it is advisable to identify the main classification criteria in Table 2 used in Ukrainian and international law.

Table 2. Classification criteria for digital objects

Classification criterion	The basis for the distinction	Legal significance	Source of regulation
Legal regime	Special vs general regulation	Identify applicable rules and procedures	Civil Code of Ukraine, special laws
Functional purpose	Purpose of use of the asset	Regulatory requirements and circulation regime	Regulation No. 2024/1624[4]
Technical replaceability	Interchangeability vs uniqueness	Peculiarities of transactions and valuation	Blockchain technical standards
Materiality	Physical vs digital form of existence	Application of law in rem vs law of obligations	Civil Code of Ukraine[5], p. 179-1
Issuer	Centralised versus decentralised production	Liability and control	Financial legislation
Territory of circulation	National versus cross-border circulation	Jurisdiction and applicable law	International agreements, FATF
Degree of regulation	Regulated vs unregulated market	Requirements for participants and operations	National financial law

Source: compiled by the author based on S.O. Hrytsay (2022), I.Yu. Guleykov (2025) and E. Michurin (2025)

The presented classification criteria reflect the multidimensionality of legal regulation of digital objects and demonstrate the complexity of creating a unified approach to their qualification. The criterion of legal regime is the basis for the determination of the hierarchy of regulations applicable to a particular object, but in the Ukrainian legal system, there is a conflict between the general provisions of the Civil Code of Ukraine on "digital objects" and special rules on virtual assets, which complicates law enforcement. Functional purpose as a criterion is of particular importance in the context of harmonisation with European law, in particular Regulation (EU) No. 2024/1624 of the European Parliament and of the Council, which

[1] Civil Code of Ukraine. (2003, January). Retrieved from https://zakon.rada.gov.ua/laws/show/435-15.
[2] Law of Ukraine No. 2074-IX "On Virtual Assets". (2022, February). Retrieved from https://zakon.rada.gov.ua/laws/show/2074-20.
[3] Law of Ukraine No. 3321-IX "On Digital Content and Digital Services". (2023, August). Retrieved from https://zakon.rada.gov.ua/laws/show/3321-20#Text.
[4] Regulation of the European Parliament and of the Council No. 2024/1624 "On the Prevention of the Use of the Financial System for the Purposes of Money Laundering or Terrorist Financing (Text with EEA relevance)". (2024, May). Retrieved from https://eur-lex.europa.eu/eli/reg/2024/1624/oj.
[5] Civil Code of Ukraine. (2003, January). Retrieved from https://zakon.rada.gov.ua/laws/show/435-15.

distinguishes between payment, investment and utility tokens, creating different regulatory regimes depending on the economic function of the asset.

The most fundamental problem of Ukrainian legislation on digital objects is the existence of deep systemic conflicts and gaps. There is a conflict of regimes between the general property regime of a "digital object" in the Civil Code of Ukraine and the special regime of a "virtual asset" as an intangible good in the relevant law, a conflict of definitions between different definitions of a "virtual asset" in Law of Ukraine No. 361-IX[1], and a legal vacuum for many types of digital objects, such as domain names, social media accounts, governance tokens, and decentralised autonomous organisations. In general, the legislation is fragmented and unsystematic, as the rules are scattered across different acts, making them difficult to interpret and apply.

The uncertainty of the legal nature of objects creates serious problems with the legal qualification of transactions involving them. When it is unclear whether an asset is an "object", "property", "property right" or "intangible good", it becomes difficult to determine the type of contract (sale, exchange, provision of services), essential terms, the moment of transfer of rights and the consequences of default. Legal definitions are often overly simplistic and do not consider the technical complexity of digital objects. A striking example is the linking of ownership to "key possession", which ignores the realities of the market: custodial services where private keys are stored by the platform, multi-signature wallets, complex smart contracts with autonomous asset management. This gap between legal abstraction and technical reality renders many rules virtually ineffective and demonstrates the limits of national law's effectiveness in the global digital environment.

The practical exercise of rights and their protection in the digital sphere face unique challenges that the traditional legal system is not prepared for. The case law is still being formed, but it already illustrates all the problems of the legislation through specific cases of cryptocurrency seizure. The most illustrative is case No. 991/1512/23[2] of the High Anti-Corruption Court of Ukraine, where the investigating judge granted the prosecutor's motion to seize virtual assets in the form of a ban on the alienation and disposal of Tether (USDT), Tron (TRX), Ethereum (ETH) cryptocurrencies, which were held on the electronic multi-currency crypto wallet of a suspect in a corruption crime under Part 4 of Article 368 of the Criminal Procedure Code of Ukraine[3]. The key legal issue was that the court was forced to justify the seizure of intangible objects using property law constructs. The court noted that although Law of Ukraine No. 2074-IX[4] has not entered into force, "Ukrainian legislation prioritises identification of the holder of the key to a virtual asset with the owner of such a virtual asset". This decision demonstrates the forced application of the unsuccessful legal fiction of a "digital object", as the court was forced to establish ownership of intangible objects through technical control over private keys.

The opposite approach was demonstrated by the Shepetivka City District Court in Case No. 688/3758/23[5], which cancelled the seizure of cryptocurrencies as material evidence, recognising that the seizure of digital assets "given their intangible and non-individualised nature, is inconsistent with the stated purpose of the seizure as the preservation of material evidence". This ruling highlights the conceptual contradiction between the intangible nature of digital objects and attempts to apply traditional property law mechanisms to them. The court recognised that cryptocurrency cannot be material evidence within the meaning of the Criminal Procedure Code of Ukraine, which defines such evidence as "a material object that has retained traces of a crime".

The case No. 752/7557/22[6] of the Holosiivskyi District Court also illustrates the practical difficulties: the court seized crypto assets but failed to clearly define the legal nature of such objects and the procedures applicable to them. An analysis of these decisions reveals a systemic problem: courts are forced to resort to "creative" interpretation of legislation or alternative legal approaches to achieve the goals of justice due to the lack of adequate legal regulation of digital objects. The protection of rights is complicated by the difficulty of identifying the infringer in pseudonymous networks, the specificity of proof, the problems of enforcing court decisions on assets on decentralised wallets or foreign exchanges, and the difficulty of inheritance due to technical and legal barriers (Vinnyk, 2023). These precedents convincingly prove that the use of the legal fiction of a "digital object" creates practical legal uncertainty and makes effective justice in the digital sphere impossible.

The legal regulation being implemented in Ukraine and globally is fundamentally transforming the subject

[1] Law of Ukraine No. 361-IX "On Prevention and Counteraction to Legalisation (Laundering) of Criminal Proceeds, Terrorist Financing and Financing of Proliferation of Weapons of Mass Destruction". (2019, December). Retrieved from https://zakon.rada.gov.ua/laws/show/en/361-20.
[2] Judgement of the High Anti-Corruption Court of Ukraine in Case No. 991/1512/23. (2023, June). Retrieved from https://reyestr.court.gov.ua/Review/111590400.
[3] Criminal Procedural Code of Ukraine. (2012, April). Retrieved from https://zakon.rada.gov.ua/laws/show/en/4651-17#Text.
[4] Law of Ukraine No. 2074-IX "On Virtual Assets". (2022, February). Retrieved from https://zakon.rada.gov.ua/laws/show/2074-20.
[5] Judgement of the Shepetivka City District Court of Khmelnytskyi Region in Case No. 688/3758/23. (2023, December). Retrieved from https://reyestr.court.gov.ua/Review/115427588.
[6] Judgement of the Holosiivskyi District Court of Kyiv in Case No. 752/7557/22. (2022, November). Retrieved from https://reyestr.court.gov.ua/Review/107216946.

composition of legal relations in this area, shifting the focus from anonymous users to identified and licensed market participants. The early ideology of cryptocurrencies was based on the principles of anonymity, decentralisation and the absence of intermediaries. However, the high risks of using these technologies for money laundering, terrorist financing and other illegal activities have forced states, including Ukraine, to respond by introducing strict financial monitoring requirements for combating money laundering and terrorist financing following the standards of the Financial Action Task Force (FATF) (n.d.). These requirements are implemented through the institution of licensed intermediaries, VASPs, who control access to the legal market and are required to know their customers (KYC) (Pochynok, 2023). This fundamentally changes the nature of legal relations. Instead of direct peer-to-peer transactions between pseudonyms, the legal circulation of digital assets is increasingly mediated by regulated entities. This approach undoubtedly increases the safety, transparency and security of participants, but at the same time it inevitably reduces the level of decentralisation and privacy that was the ideological core of these technologies at the initial stage. Thus, the law effectively "centralises" decentralised technologies, subjecting them to state interests and control.

Comparative legal analysis of the regulation of digital objects. Analysis of international experience is critical for Ukraine, as it can be used to avoid mistakes, adopt best practices, and harmonise national legislation with global trends. Table 3 shows the approaches of the jurisdictions of China, Switzerland, Germany, Japan, Singapore and the United States, each of which demonstrates unique models of legal regulation of digital assets.

Table 3. Key differences in the regulation of digital objects

Jurisdiction	Legal status of cryptocurrency	Key regulatory authority	Regulatory approach	CBDC
China	"Virtual goods" with limited property rights; trading is prohibited	PBoC	Strict control, ban on trade	Digital yuan (e-CNY)
Switzerland	"DLT rights" as a new asset class; payment tokens	FINMA	Innovative, legal certainty	No operating CBDC
Germany	"Cryptoassets" under the Banking Act[1]; electronic securities	BaFin	Adaptation of traditional law	No operating CBDC
Japan	"Cryptoassets" with strict regulation of exchanges	JFSA	Investor protection and transparency	Development of the digital yen
Singapore	Digital payment tokens (DPT); ownership recognised by courts	MAS	A balanced approach	The Guardian project
USA	Intangible property under the UCC	IRS, state regulators	Innovations at the state level	No federal CBDC

Note: PBoC – People's Bank of China; BaFin – German Federal Financial Services Authority; JFSA – Japan Financial Services Agency; MAS – Monetary Authority of Singapore; IRS – US Internal Revenue Service; UCC – Uniform Commercial Code; CBDC – Central Bank Digital Currency; DLT – Distributed Ledger Technology.
Source: compiled by the author based on J. Feldman *et al.* (2021), NFT regulations in Japan (2021), TeraLex (2022), S. Kaaru (2024), K. Low & M. Hara (2024), A. Fillman (2025), Internal Revenue Service (n.d.), KYC Hub (n.d.)

A comparative analysis of the presented jurisdictions revealed three main regulatory models, each of which reflects different conceptual foundations of state policy towards digital assets. The restrictive model, implemented by China, is characterised by a complete ban on private cryptocurrency circulation while maintaining limited property rights and active development of the state's digital currency, which reflects the priority of financial stability and monetary sovereignty over technological innovation. The liberal model, represented by Switzerland and certain US states, is aimed to create the most favourable investment climate through the introduction of new legal categories and flexible regulatory approaches, which attract capital and stimulate the development of the fintech sector. The balanced model implemented by Germany, Japan, and Singapore combines technological openness with enhanced requirements for investor protection and financial stability, integrating crypto asset regulation into the existing financial framework by adapting traditional legislation. Of note is the approach to the development of digital currencies by central banks, which demonstrates strategic differences: from active implementation in China to experimental projects in Singapore and the absence

[1] Banking Act of the Federal Republic of Germany. (1961, July). Retrieved from https://www.gesetze-im-internet.de/kredwg/BJNR008810961.html.

of federal initiatives in the United States, reflecting different views on the role of the state in the digital transformation of the monetary system.

The European Union's approach is the most comprehensive and systematic among the existing regulatory models. Instead of fragmented regulation of certain aspects, the European Union has developed and adopted a single comprehensive Regulation of the European Parliament and of the Council No. 2024/1624[1] (MiCA), which aims to create a harmonised legal framework for the entire EU single market. The key feature of MiCA is the functional classification of crypto assets, according to which the regulation divides assets not by formal features, but by their economic function into electronic money tokens (EMT), asset-backed tokens and utility tokens (UT) (Zetzsche *et al.*, 2021). At the same time, MiCA establishes strict requirements for issuers and service providers (CASPs), providing detailed rules for the authorisation, operation and supervision of issuers and service providers related to cryptoassets. A substantial element of the European model is the concept of a "European passport", according to which a licence obtained by a service provider in one EU member state entitles it to operate throughout the Union, which contributes to the development of a single market. The Regulation also contains a significant set of rules aimed to protect consumer rights, prevent market manipulation and ensure transparency. For Ukraine, which has the status of a candidate for EU accession, the provisions of the MiCA provide a benchmark for harmonising national legislation with European standards for regulating virtual assets.

The US approach is fundamentally different and is based on a fundamentally different regulatory philosophy. Instead of creating a single special law, US regulators apply existing securities, commodities, and financial services laws, such as the Securities Act of 1933[2], to digital assets, resulting in what is known as "regulation by enforcement". Several agencies are central in this system, with often overlapping responsibilities. The Securities and Exchange Commission (SEC) applies the well-known "Howey Test"[3] to determine whether a digital asset is an "investment contract" and therefore a security subject to its regulation, and the SEC has taken the position that most tokens (except Bitcoin) are securities (Reiff, 2023).

At the same time, the CFTC (2015) considers some cryptocurrencies, including Bitcoin, to be commodities and regulates the market for derivatives on them. The Financial Crimes Enforcement Network (FinCEN) imposes strict anti-money laundering and counter-terrorist financing (AML/CFT) requirements on service providers that qualify as Money Services Businesses. For tax purposes, the Internal Revenue Service (IRS) treats digital assets as property rather than currency, which means that they are subject to capital gains taxation when sold. This approach creates significant regulatory uncertainty for businesses, as the status of many assets is determined not by law, but by litigation initiated by regulators. Switzerland has chosen the path of progressive and flexible regulation, which made it one of the world's centres for the crypto industry, known as the "Zug Crypto Valley"[4]. Instead of creating legislation from scratch, Switzerland has made pointed but systematic changes to existing laws.

The emergence of competing draft laws from the National Securities and Stock Market Commission (NSSMC) and the Ministry of Digital Transformation essentially reflects a debate on how best and most efficiently to implement MiCA approaches into the Ukrainian legal system[5]. This means that the future of Ukrainian regulation will be determined not so much by internal doctrinal disputes as by the external need to adapt to European standards. This sends a clear signal to Ukrainian businesses and investors: it is strategically correct to focus on MiCA requirements, as any purely national regulation is likely to be temporary and will be brought into full compliance with the European one in due course. Summarising the international experience of regulating digital assets, it is possible to state that the global trend is towards creating a comprehensive regulatory framework that combines innovation with adequate investor protection and financial stability. For Ukraine, as a candidate country for EU accession, it is strategically justified to focus on the European MiCA model, which provides legal certainty, consumer protection and the possibility of integration into the single European market. At the same time, it is necessary to consider Switzerland's experience with technology neutrality and flexible licensing, and to avoid the American model of regulation through enforcement, which creates significant uncertainty for market participants. The key challenge for Ukraine remains the need to rapidly implement European standards while maintaining the competitiveness of the national jurisdiction in the global competition for attracting investment in digital technologies.

[1] Regulation of the European Parliament and of the Council No. 2024/1624 "On the Prevention of the Use of the Financial System for the Purposes of Money Laundering or Terrorist Financing (Text with EEA Relevance)". (2024, May). Retrieved from https://eur-lex.europa.eu/eli/reg/2024/1624/oj.

[2] Securities Act of the USA. (1933). Retrieved from https://www.govinfo.gov/content/pkg/COMPS-1884/pdf/COMPS-1884.pdf.

[3] Opinion of the Supreme Court of USA in Case "SEC v. W.J. Howey Co., 328 U.S. 293". (1946, May). Retrieved from https://supreme.justia.com/cases/federal/us/328/293/.

[4] Federal Act of Switzerland "On the Adaptation of Federal Law to Developments in Distributed Electronic Register Technology". (2021, February). Retrieved from https://www.bk.admin.ch/ch/d/pore/rf/cr/2019/20192205.html.

[5] Draft Law of Ukraine No. 10225 "On Amendments to the Tax Code of Ukraine and Other Legislative Acts of Ukraine Regarding the Regulation of the Turnover of Virtual Assets in Ukraine". (2023, November). Retrieved from https://itd.rada.gov.ua/billinfo/Bills/Card/43232.

Discussion

The findings of the study confirm the concept of digital objects as a unique *sui generis* legal phenomenon, which correlates with the conclusions of international studies. The prospects for introducing the concept of "digital objects" and "digital content" to expand the scope of regulation of virtual assets, as considered by S. Hrytsai (2023), confirm the problematic application of traditional legal structures to intangible objects identified in the study. At the same time, the results of the analysis of Ukrainian legislation demonstrate deeper systemic conflicts than those indicated in foreign works. In particular, the author reveals a fundamental contradiction between the extension of the property regime to intangible goods in the Civil Code of Ukraine and the special regime of virtual assets as intangible goods in the relevant law, which creates legal uncertainty for market participants. O.M. Vinnyk (2023) studied the specifics of the Ukrainian experience of forming the legal framework for the digital economy and identified critical shortcomings in coordination between different regulatory authorities, which confirms the results of the analysis of competing draft laws from the NSSMC and the Ministry of Digital Transformation. The researcher proved that the fragmentation of Ukrainian legislation creates legal uncertainty and impedes innovative development, proposing a model of a unified institutional architecture for regulation, which fully coincides with the conclusions on the need for a comprehensive review of legislative approaches and the creation of a unified conceptual framework for the regulation of digital assets.

The conclusions regarding the need to recognise the unique legal nature of digital objects are consistent with the research of J. Wyczik (2025), analysing property in the twenty-first century through the prism of digital asset law. However, the results of a comparative analysis of different jurisdictional approaches presented by L. Lee (2024) show a more complex picture of the legal status of digital assets than was revealed in the study of the Ukrainian context alone. The critical analysis shows that the Ukrainian model of a "digital object" is a more radical attempt to integrate digital objects into the traditional legal system than the approaches used in other jurisdictions, which makes it both more ambitious and more problematic. The problematic application of the rules of property law to cryptoassets identified in the study is in line with the findings of P.Ç. Aksoy (2023) on the applicability of the rules of real law to cryptoassets from the standpoint of continental and Anglo-Saxon law. At the same time, the results of the analysis show that the Ukrainian model of a "digital object" creates more serious conceptual contradictions than the approaches considered in foreign studies. Particularly problematic is the application of vindication and negation claims to digital assets, as demonstrated in court practice, particularly in cases of seizure of cryptocurrencies as material evidence. The study of the legal status of digital financial assets as an object of civil rights conducted by T.G. ugli Pulatov (2024) demonstrates similar problems in different legal systems. The results of the analysis of the Uzbek experience indicate the general challenges faced by post-Soviet countries when trying to integrate digital assets into traditional legal frameworks. At the same time, the Ukrainian model appears to be more radical due to the use of the legal fiction of extending property rights to intangible objects, which creates unique legal conflicts.

The complexity of the correlation between the rights to NFTs and underlying objects identified in this study is confirmed by E.C. Lim (2024) on digital art, tokenised assets, and virtual property in the context of copyright. The results of the analysis of Ukrainian legislation demonstrate the lack of a clear distinction between these aspects, which creates additional legal risks. It is critical that the classification of digital content as "digital objects" in the Civil Code of Ukraine[1] directly contradicts the copyright regime of most such objects, which confirms the need to develop a special legal regime for different categories of digital objects. The conclusions regarding the legal nature of non-fungible tokens and property rights correlate with the results of a study by J. Kaisto *et al.* (2024) on tokenisation and property. However, the results of the analysis of Ukrainian legal regulation reveal more fundamental problems in determining the legal status of these objects. In particular, the absence of a distinction between the rights to the NFT itself and the rights to the underlying object creates legal uncertainty that may lead to the violation of both property and exclusive rights. Ukrainian legislation does not address the complex nature of NFTs as a hybrid object combining technological, artistic and legal aspects.

The legal issues of NFTs in the arts sector identified in the study are consistent with the findings of W. Jia & B. Yao (2024) on legal issues and case law. The results of the analysis demonstrate the need to develop special regulations for this area in Ukraine. It is necessary to regulate the relationship between NFT rights and copyright in basic works, which requires a cross-sectoral approach. The necessity of using digital assets to enforce intellectual property rights, substantiated in the study, is supported by C.A. Makridis & J.D. Ammons (2025), who consider the management of shared resources of large language models through digital assets. At the same time, the results of the study show that Ukrainian legislation does not consider these promising areas of development. The lack of regulation of governance tokens and decentralised autonomous organisations creates a legal vacuum for innovative models of intellectual property management in the digital environment.

[1] Civil Code of Ukraine. (2003, January). Retrieved from https://zakon.rada.gov.ua/laws/show/435-15.

The problems of the legal framework for new digital assets identified in the study correlate with the conclusions of C.P. Sempere (2025) on the legal framework for new digital assets, identities and data in the European single market. The results of the analysis demonstrate the need to adapt the Ukrainian legal system to European standards. At the same time, the study determined that the current Ukrainian Law of Ukraine No. 2074-IX[1] contains significant differences from the MiCA approach, including a unique classification of "secured/unsecured" assets, which may complicate future harmonisation with European law. A study of virtual property in the metaverse and challenges to res digitalis by J.P. Ricciardi (2023) revealed promising areas for the development of legal regulation of digital objects. The results of the analysis show that Ukrainian legislation is not ready to regulate complex virtual worlds and the metaverse, where digital objects may have multiple forms of existence and complex interconnections. The concept of a "digital object" is too simplistic to cover the diversity of objects in virtual environments.

The limitations of the current private law on digital assets identified in this study were confirmed by J. Soukupová (2024). However, the results of the analysis show that in the Ukrainian context, these restrictions are more critical due to the use of the unsuccessful legal fiction of a "digital object". Comparative analysis shows that most European legal systems avoid such a radical approach, preferring more flexible and adaptive regulatory mechanisms. The concept of property as a right of virtual objects, developed by J.A.T. Fairfield (2022), offers an alternative approach to research of the legal nature of digital objects, which consists in recognising virtual assets as objects of property rights regardless of their physical nature, with an emphasis on functional characteristics (exclusivity, transferability, stability). The results of the study show that the Ukrainian model partially borrows these ideas, but implements them through a problematic legal fiction. The critical analysis shows that the application of the concept of "virtual objects" requires a more in-depth identification of traditional legal categories than is done in Ukrainian legislation.

The need to redefine property rights in the context of NFTs, identified in the study, correlates with the findings of Á. Juhász (2023) on non-fungible tokens and property rights from a Hungarian perspective. The results of the study demonstrate that the Ukrainian model needs a more radical rethink. The comparative analysis shows that the Hungarian approach is more cautious and considers the specifics of NFTs as objects that combine technological and artistic aspects. The importance of adapting legal regulation to the Fourth Industrial Revolution, substantiated in this study, is supported by the works of V. Giang & V.T.M. Huong (2023), who analysed digital assets in the context of international integration. At the same time, the results show specific challenges for the Ukrainian legal system related to the need to simultaneously implement legal reforms and European integration processes. Critically, current Ukrainian regulation may create barriers to participation in global digital ecosystems.

A general analysis of international experience shows that most leading jurisdictions avoid radical changes in basic legal categories, preferring to create special legal regimes for digital objects. The Ukrainian model of a "digital object" is a unique but problematic attempt to integrate new technologies into the traditional legal system. The results of the study demonstrate the need to revise this approach and employ a more flexible and adaptive regulatory model that incorporates the diversity of digital objects and their specific legal needs.

Conclusions

A comprehensive analysis of the legal nature of digital objects has led to the conclusion that they represent a unique *sui generis* legal phenomenon which does not fully fit into classical civil law constructs. The study demonstrated that the attempt to apply the outdated legal fiction of "object" to digital objects, as enshrined in the Civil Code of Ukraine, was determined to be theoretically contradictory, created systemic conflicts with other laws, and proved to be practically ineffective, as evidenced by the first attempts at law enforcement in court practice. An analysis of the current legal regulation in Ukraine has shown that it is fragmented, incomplete and largely ineffective. The key problem was the ineffective status of the fundamental Law of Ukraine No. 2074-IX, which hindered the development of the legal market and left its participants without proper legal protection. At the same time, the simultaneous existence of several parallel and partially contradictory legal regimes created additional legal uncertainty for all digital market participants.

A comparative legal analysis of international experience has made it possible to identify three main regulatory models: restrictive (China), liberal (Switzerland, certain US states) and balanced (Germany, Japan, Singapore), which reflect different conceptual foundations of the State policy on digital assets. The study established that for Ukraine, as a candidate country for EU accession, it is strategically justified to prioritise the European MiCA model, incorporating the Swiss experience of technological neutrality and flexible licensing. A system of classification criteria for digital objects has been developed, including legal regime, functional purpose, technical substitutability, materiality, type of issuer, territory of circulation, and degree of regulation. This system can be used for the formation of differentiated

[1] Law of Ukraine No. 2074-IX "On Virtual Assets". (2022, February). Retrieved from https://zakon.rada.gov.ua/laws/show/2074-20.

legal regimes for different categories of digital assets depending on their specific characteristics and economic functions.

The study determined that to build an effective and modern system of legal regulation of digital objects in Ukraine, it is necessary to conceptually revise the approach enshrined in the Civil Code of Ukraine. The author establishes the expediency of abandoning the unsuccessful fiction of a "digital object" and supplementing Article 177 of the Civil Code of Ukraine with a new, independent category of civil rights objects called "digital assets" or "digital goods" with a clear definition of their intangible nature and establishment of the specifics of the legal regime through special legislation. The need to harmonise the terminology by unifying the definition of a "virtual asset" in all legal acts, incorporating international FATF standards and the functional classification of the MiCA Regulation, proved to be critical. The study has shown that the primary and urgent task is to adopt amendments to the Tax Code of Ukraine to establish set, comprehensible and competitive rules for taxation of transactions with virtual assets, which will enact the basic law and launch the process of forming a legal market. Prospects for further research include the legal regulation of decentralised autonomous organisations and governance tokens, the use of artificial intelligence in the field of digital assets, central bank digital currencies, personal data protection in blockchain systems, and the development of international instruments to harmonise the regulation of cross-border circulation of digital assets.

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Conflict of Interest

None.

References

[1] Aksoy, P.Ç. (2023). The applicability of property law rules for crypto assets: Considerations from civil law and common law perspectives. *Law, Innovation and Technology*, 15(1), 185-221. doi: 10.1080/17579961.2023.2184140.

[2] CFTC. (2015). *CFTC orders bitcoin options trading platform operator and its CEO to cease illegally offering bitcoin options and to cease operating a facility for trading or processing of swaps without registering*. Retrieved from https://www.cftc.gov/PressRoom/PressReleases/7231-15.

[3] Dmytryk, O. (2021). Virtual assets and digital assets: To the question of correlation of concepts. *Law and Innovation Society,* 17(2), 248-254. Retrieved from https://surl.li/seuavu.

[4] Fairfield, J.A.T. (2022). Tokenized: The law of non-fungible tokens and unique digital property. *Indiana Law Journal*, 97(4), article number 4.

[5] Feldman, J., Raykin, A., & Gove, J. (2021). *Delaware unclaimed property act applies to cryptocurrency*. Retrieved from https://surl.li/lncfgk.

[6] Fillman, A. (2025). *Update of German law aspects of crypto assets*. Retrieved from https://www.restructuring-globalview.com/2025/02/update-of-german-law-aspects-of-crypto-assets/.

[7] Financial Action Task Force. (n.d.). *FATF Recommendations*. Retrieved from https://surl.li/ngbucf.

[8] FINMA publishes guidelines on ICOs. (2018). Retrieved from https://surl.lu/tenkrt.

[9] FINMA. (n.d.). *Fintech approval*. Retrieved from https://surl.lu/bkksey.

[10] Garcia-Teruel, R.M., & Simón-Moreno, H. (2021). The digital tokenization of property rights. A comparative perspective. *Computer Law & Security Review*, 41, article number 105543. doi: 10.1016/j.clsr.2021.105543.

[11] Giang, V., & Huong, V.T.H. (2023). Digital assets in the context of the fourth industrial revolution, international integration, and Vietnamese law. *Cogent Social Sciences*, 9(1), article number 2187010. doi: 10.1080/23311886.2023.2187010.

[12] Guleykov, I.Yu. (2025). *Digital assets in civil turnover of Ukraine*. Kyiv: National Academy of Legal Sciences of Ukraine Scientific Research Institute of Private Law and Entrepreneurship named after Academician F.G. Burchak.

[13] Hrytsai, S. (2023). Prospects for introducing the concept of "digital things" and "digital content": Expanding the scope of regulation of virtual assets. *Krakow Lesser Poland Studies*, 38(2), 7-25.

[14] Hrytsay, S.O. (2022). The legal essence of the definition of "virtual assets" in the Law of Ukraine. *Electronic Scientific Publication "Analytical and Comparative Law"*, 1, 244-248. doi: 10.24144/2788-6018.2022.01.45.

[15] Internal Revenue Service. (n.d.). *Digital assets*. Retrieved from https://www.irs.gov/filing/digital-assets.

[16] Jia, W., & Yao, B. (2024). NFTs applied to the art sector: Legal issues and recent jurisprudence. *Convergence*, 30(2), 807-822. doi: 10.1177/13548565231199966.

[17] Juhász, Á. (2023). Time for rethinking? Non-fungible tokens and ownership rights from the Hungarian point of view. *Multidisciplinary Sciences,* 13(3), 36-46. doi: 10.35925/j.multi.2023.3.4.

[18] Kaaru, S. (2024). *Digital asset ownership legal in China: Shanghai judge*. Retrieved from https://coingeek.com/digital-asset-ownership-legal-in-china-shanghai-judge/.
[19] Kaisto, J., Juutilainen, T., & Kauranen, J. (2024). Non-fungible tokens, tokenization, and ownership. *Computer Law & Security Review*, 54, article number 105996. doi: 10.1016/j.clsr.2024.105996.
[20] Kiskis, M. (2024). Private law framework for blockchain. *Frontiers in Blockchain*, 7, article number 1205461. doi: 10.3389/fbloc.2024.1205461.
[21] Klyan, A., & Selivakin, I. (2023). *NFT in Ukraine: Technology and legal regulation*. Retrieved from https://eba.com.ua/nft-v-ukrayini-tehnologiya-ta-pravove-regulyuvannya/.
[22] Kostyuchenko, Ya.M. (2021). The experience of legal regulation of the development of the digital economy on the example of the leading countries of the world. *Actual Problems of Domestic Jurisprudence*, 3, 189-194. doi: 10.15421/392171.
[23] KYC Hub. (n.d.). *A global overview of cryptocurrency regulations in 2025*. Retrieved from https://www.kychub.com/blog/cryptocurrency-regulations-around-the-world/.
[24] Lawrange. (n.d.). *Cryptocurrency exchange license in Switzerland*. Retrieved from https://surl.li/glzjbi .
[25] Lee, L. (2024). Examining the legal status of digital assets as property: A comparative analysis of jurisdictional approaches. *SSRN*. doi: 10.2139/ssrn.4807135.
[26] Lim, E.C. (2024). Finding nemo: Digital art, tokenised assets, virtual property and the right of communication in copyright law. *Journal of World Intellectual Property*, 27(1), 69-87. doi: 10.1111/jwip.12290.
[27] Low, K., & Hara, M. (2024). *Cryptoassets and property*. Retrieved from https://surl.lu/aupjwk.
[28] Makridis, C.A., & Ammons, J.D. (2025). Governing the large language model commons: Using digital assets to endow intellectual property rights. *Journal of Institutional Economics*, 21, article number e19. doi: 10.1017/S1744137425000165.
[29] Michurin, E. (2022). Digital technology objects and their legal regulation. *Copernicus Political and Legal Studies*, 1(3), 22-29. doi: 10.15804/CPLS.20223.03.
[30] Michurin, E. (2025). The digital thing and other digital goods as objects of civil rights. *Uzhhorod National University Herald. Series: Law*, 1(88), 323-327. doi: 10.24144/2307-3322.2025.88.1.47.
[31] Moringiello, J.M., & Odinet, C.K. (2022). The property law of tokens. *Florida Law Review*, 74(4), 607-670. doi: 10.2139/ssrn.3928901.
[32] Neskorodzhena, L.L., Bon, B.O., & Kononets, O.M. (2024). Current state of legal regulation of cryptocurrencies in Ukraine. *Legal Scientific Electronic Journal*, 3, 197-200. doi: 10.32782/2524-0374/2024-3/44.
[33] NFT regulations in Japan. (2021). Retrieved from https://law.asia/nft-regulations-japan/.
[34] Pochynok, A. (2023). Structure of legal relations related to the circulation of virtual assets. *Bulletin of Lviv Polytechnic National University. Series: Legal Sciences*, 10(4), 219-231. doi: 10.23939/law2023.40.219.
[35] Popov, R.V. (2024). EU regulation of the virtual assets market. *Law and Public Administration*, 3, 295-300. doi: 10.32782/pdu.2024.3.42.
[36] Reiff, N. (2023). *Howey Test Definition: What it means and implications for cryptocurrency*. Retrieved from https://www.investopedia.com/terms/h/howey-test.asp.
[37] Ricciardi, J.P. (2023). *Virtual property in the metaverse: The upcoming challenges of res digitalis.* Lisbon: Catholic University of Portugal.
[38] Sempere, C.P. (2025). The legal framework for new digital assets, identities, and data spaces. Introduction. In *Governance and control of data and digital economy in the European Single Market: Legal framework for new digital assets, identities and data spaces* (pp. 3-21). Cham: Springer. doi: 10.1007/978-3-031-74889-9_1.
[39] Shapovalova, I. (2024). Internal challenges of regulating virtual assets in Ukraine. *Bulletin of the National Academy of Ukrainian Academies*, 9(104), 42-43.
[40] Slipchenko, A.S., & Slipchenko, S.O. (2024b). Determination of the legally significant essence of a digital thing in the Civil Law of Ukraine. *Forum Prava*, 78(1), 88-96. doi: 10.5281/zenodo.10870775.
[41] Slipchenko, S.O., & Slipchenko, A.S. (2024a). Legal regime of digital things in the context of the domestic concept of property rights. *Legal Scientific Electronic Journal*, 4, 216-223. doi: 10.32782/2524-0374/2024-4/50.
[42] Soukupová, J. (2024). *Digital assets and the limits of the current private law*. Prague: Charles University.
[43] TeraLex. (2022). *Terralex cross-border guide to crypto assets: Switzerland*. Retrieved from https://www.lalive.law/wp-content/uploads/2024/02/TerraLex-Website-report-27_Sep_2022_05_20_39_039.pdf.
[44] Trofymenko, D.S., & Fedorenko, D.O. (2022). Problematic aspects of understanding the legal nature of digital content. *European Law Science*, 1, 43-47.
[45] ugli Pulatov, T.G. (2024). Digital financial assets as an object of civil rights. *Uzbekistan Law Review,* 17(4), 53-59.
[46] Vinnyk, O.M. (2023). *Law of the digital economy of Ukraine.* Kyiv: Research Institute of Private Law and Entrepreneurship named after Academician F. G. Burchak of the National Academy of Sciences of Ukraine.

[47] Wyczik, J. (2025). Ownership in the 21st century: Property law of digital assets. *Information & Communications Technology Law*, 34(2), 187-206. doi: 10.1080/13600834.2024.2408917.
[48] Yarotsky, V.O. (2023). Concept and types of virtual assets that may be in circulation under the legislation of Ukraine. *Academic notes of the V.I. Vernadsky TNU. Series: Legal Sciences*, 34(4), 101-107. doi: 10.32782/TNU-2707-0581/2023.4/15.
[49] Zerov, K. (2023). *Digital things, digital content, NFT and copyright: the relationship within the expanded range of civil rights objects*. Retrieved from https://surl.li/sigjtu.
[50] Zetzsche, D.A., Annunziata, F., Arner, D.W., & Buckley, R.P. (2021). The markets in crypto-assets regulation (MiCA) and the EU digital finance strategy. *Capital Markets Law Journal*, 16(2), 203-225. doi: 10.1093/cmlj/kmab005.
[51] Zozulyak, O.I., & Maksymiv, L.M. (2024). Digital things as objects of civil rights: Updated approaches. *Law and Society*, 6, 45-52. doi: 10.32842/2078-3736/2024.6.7.

Цифрові об'єкти як новий вид об'єктів цивільних прав: теоретичні аспекти та критерії класифікації

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Анотація
Метою дослідження був комплексний аналіз правової природи цифрових об’єктів як нового виду об’єктів цивільних прав, а також розроблення теоретичних засад їх ефективного правового регулювання в умовах цифрової трансформації суспільства. Методологічну основу дослідження становили: порівняльно-правовий метод – для аналізу підходів до правового регулювання цифрових об’єктів у правових системах Китаю, Швейцарії, Німеччини, Японії, Сінгапуру й США; формально-юридичний метод – для дослідження чинного українського законодавства; системний аналіз – для вивчення цифрових об’єктів як комплексного явища. У дослідженні встановлено, що цифрові об’єкти є унікальним правовим явищем, яке не повною мірою відповідає класичним цивілістичним конструкціям і потребує створення спеціального правового режиму. Виявлено фрагментарність і суперечливість українського правового регулювання, зокрема системні колізії між загальним речово-правовим режимом цифрових речей у Цивільному кодексі України й спеціальним режимом віртуальних активів у профільному законі. Доведено проблематичність застосування юридичної фікції поширення речового права на нематеріальні об’єкти, що створює правову невизначеність і ускладнює правозастосування. Аналіз судової практики встановив практичні проблеми застосування чинного законодавства, зокрема під час арешту криптовалют як речових доказів у кримінальних провадженнях. Обґрунтовано необхідність перегляду підходу шляхом відмови від фікції цифрової речі й створення окремої категорії цифрових активів з особливим правовим режимом. Практична цінність дослідження полягає у створенні теоретичного підґрунтя для вдосконалення правового регулювання цифрових об’єктів і можливості використання результатів у законотворчій діяльності, правозастосовній практиці та подальших наукових дослідженнях

Ключові слова:
кастодіальні сервіси; віртуальний актив; токени; блокчейн; транзакції