VALUABLE ASPECTS OF DIGITAL BOONS AS OBJECTS OF CIVIL RIGHTS OF A PERSON

Donets Anton

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Annotation. This paper reflects the results of studying the legal nature of digital things and virtual assets as objects of civil rights/ legal relations through the prism of their value component. The aim of the study is to determine the factors (specifically, properties together with characteristics of digital things) that impact the value of these phenomena, thus, enabling their probability to be objects of civil rights/legal relations.

The methodological basis of scientific research constitutes the dialectical method of cognition, the application of which made it possible to analyze modern and historical approaches to defining institutions of a digital thing as well as a virtual asset, their legal nature and features. The formal-logical method has been used in order to analyze the norms of legislation that form the legal basis for comprehensive regulation of relevant relations. The method of analysis and synthesis has been applied while studying the practical manifestation of relations to ensure the turnover of digital things along with virtual assets. The comparative-legal method has been used for a comparative analysis of the legal regulation of institutions of digital things together with virtual assets in the latest legislation of the European Union and Ukraine. The logical-legal method has been applied so as to formulate the main conclusions in accordance with the aim of the specified study.

The result of the study has been the determination of relevant properties of digital assets as well as virtual ones, which define the value component of the above objects. It has been concluded that neither value nor functionality significantly affect the value of the mentioned phenomena. Specific features along with properties inherent only to these objects come to the fore, to illustrate, adaptability, security of transactions, decentralization, pseudonymity, in addition to availability. Regardless of the fact that the specified properties are basic for comprehanding the nature of digital things and virtual assets, they are subject to significant external influence. In particular, the importance of decentralization together with pseudonymity is levelled due to the rapid and powerful development of legal regulation, aimed at a fairly high level of restrictions as well as regulations. At the same time, the prevalence of the turnover of the above mentioned objects is unlikely to slow down due to exceptional advantages, ensuring a significantly more prompt and accessible satisfaction of market participants' relevant needs.

Key words: digital asset, virtual asset, crypto-asset, digital thing, value, blockchain, token.

1. Introduction.

A digital thing is a new object of civil rights. Consolidating the latter category at the level of the Civil Code of Ukraine (hereinafter – CCU) is a logical, consistent and natural continuation of law development in modern conditions of global digital transformation of society along with public relations [1], explicitly those regulated by law. For a long time, the legislator had been paying attention to new digital boons mostly within the framework of public legal branches of domestic law. The stated consequently led to a desire/ need to primarily satisfy the public interest in controlling the turnover of virtual/ crypto assets, which, in its turn, was caused by an increased peril of using new objects for illegal and criminal purposes. However, defining the categorical apparatus in the

field of legal regulation of objects of property turnover shall definitely be carried out at the level of the main normative legal act of private law, exceptionally, the CCU. Therefore, determining the concept along with basic principles of regulating such a new category of objects of civil rights as a 'digital thing' quite naturally found its place in its provisions.

In spite of entirely positive consequences of such a novel, there are also negative ones. Of a particular interest is the emergence of a range of questions regarding the legal nature of the new object, its place among other tangible and intangible boons together with the relationship with the latter, internal specific classification, legal regulation, etc. Solving the aforementioned issues for effective legal regulation is impossible without a deep, doctrinally grounded comprehension of the essence of 'digital boons' phenomenon in all its manifestations and definitions, for instance, as a digital thing, a virtual asset, etc.

Due to active law-making activity in the specified area both in Ukraine and in foreign jurisdictions, to precise, the EU, a current situation in the legal sphere causes the existence of certain terminological discrepancies as well as inconsistencies. The point is about defining and correlating the concepts of 'digital thing' – 'virtual asset' in Ukrainian legislation along with EU law, namely, Markets in Crypto-Assets Regulation (hereinafter – MiCA) [2]. To elucidate, the Law of Ukraine 'On Virtual Assets' [3] of 17 February 2022 has not entered into force, though taking into account the submission of two draft laws (No. 10225, 10225-1) [4] on amendments to the specified law at the end of year 2023, it will but in a completely new version. Both projects have been developed taking into consideration August amendments (on digital things) to the CCU and MiCA provisions. However, when defining a virtual asset as a type of digital thing, project developers did not change its name to a crypto-asset. In addition, the concept of 'digital thing' is currently defined quite broadly by the CCU, including virtual assets, digital content along with other boons being created and further existing exclusively in the digital environment in addition to having property value. Within the scope of the specified study, the digital thing is considered rather when understanding the definition of the concept of 'digital asset,' provided in the UNIDROIT Principles [5], not covering a wide range of objects defined as 'digital content.' Hence, in this paper, the concepts of 'digital thing' together with 'virtual asset' are regarded as synonymous ones with those of 'digital asset' as well as 'cryptoasset' respectively.

Like any boon, digital things have acquired object potential due to their inherent features, specifically, the ability to meet the needs of subjects of civil legal relations, the one to be valued and have value, along with the possibility to be negotiable. The stated characteristics in one way or the other form such a characteristic of the object as value. In other words, it can be said that this or that a particular boon becomes the object of civil legal relations because of its value for the subject of the mentioned relations, which, in its turn, is determined by the ability of such a boon to meet the needs of the specified subject in addition to being transferred to other subjects, taking into account the value of such a boon.

Regarding the turnover of digital things, it shoud be elucidated that the former is primarily determined by such a constitutive feature of a digital thing as its possibility to exclusively exist within the so-called digital environment. Of a significance is also the fact that there is a single legal definition of the aforementioned concept, contained in the Law of Ukraine (hereinafter – LoU) 'On Digital Content and Digital Services' of 10 August 2023 [6]. The provisions of clause 10, part 1 of Article 2 of the specified law define that the digital environment is hardware, software together with any network connection used in order to gain access to digital content and/ or digital service as well as ensuring the possibility of using the latter by the consumer. It should also be noted that the use of the given definition for all types of digital things, including virtual assets, at this stage of the development of domestic legislation is possible only by analogy. Since the above-mentioned law regulates exclusively relations related to digital content as a type of digital things, neither the CCU nor the LoU 'On Virtual Assets' along with the draft LoU 'On Amendments to the Tax Code of Ukraine and Other Legislative Acts of Ukraine on Regulation of Turnover of Virtual Assets in Ukraine' contain relevant definitions.

According to the above definition of 'digital environment,' one of its varieties is the so-called 'virtual reality' or Metauniverse. In accordance with the 2022 Report of the Intellectual Property Office of the Ministry of Economy of the Republic of China (Taiwan) [7], based on analytics covering about 107.000

patents and patent applications from different parts of the world, it is expected that the Metauniverse grounded on principles of virtual reality technologies will contribute to transiting a significant part of public interactions to virtual space in the near future. The aforementioned technologies may significantly facilitate communication between participants, thus, boosting its efficiency. In this context, the role along with importance of digital things, which constitute an integral component of the digital environment, are undergoing rapid and continuous growth. Furthermore, emphasizing the adequate legal regulation of these relations becomes substantial, applied not only to security aspects. To highlight, the issue of defining and legally regulating such a new civil law institution as the 'digital environment' should certainly be the subject of a separate study. However, the rapid development of the market of digital things together with virtual assets within the former raises a number of other questions for researchers. Despite numerous scandals and collapses of crypto-industry entities during years 2021-2023, certain chaotic, unstable as well as inefficient pricing in this area [8], a great impact on the market of manipulative and sometimes even fraudulent actions on the part of both virtual asset market participants themselves along with a large number of hackers, which, in its turn, drastically increases the volatility of virtual assets [9], it can be traced the relentless interest of subjects, the liveliness of corresponding markets, in addition to the dynamic fluctuation of prices for quite diverse virtual assets. The above stated indicates the presence of factors positively influencing the ability of digital boons to be relevant objects of civil rights/ legal relations.

Therefore, the analysis of the value aspects of such new objects of private law becomes relevant. Of importance is to understand that any boon, regardless of its tangible or untangible nature, is valuable for the subject and, accordingly, is an object of private law exceptionally because of its value.

2. Analysis of scientific publications.

Digital things, virtual assets as objects of legal relations, together with corresponding legal relations have been the object of research of Ukrainian as well as foreign scientists merely over the last ten to fifteen years due to the rapid development of the specified public sphere these days. Such scientists as O. Kud, O. Dmytryk, A. Isaev, V. Logoida, N. Filatova, E. Smychok, O. Kulyk, A. Ovcharenko, E. Toufaily, M. García-Ramos Lucero, A. Ferreira, P. Sandner, N. Vandezande, A. Aziz, N. Noor, O. Mashhour and others have paid attention to various aspects of the aforementioned topic, in particular financial, civil, criminal law. However, the stated scientists along with researchers in their works did not concern the definition in addition to the importance of factors determining the value of a digital thing and a virtual asset as a boon so as to understand the nature of the mentioned phenomena as objects of civil rights/ legal relations.

3. The aim of the work.

The aim of this paper is to study the legal nature of digital things, to precise, virtual assets through the prism of their value component as objects of civil rights/ legal relations as well as determining factors that affect the specified component.

4. Review and discussion.

The value of objects of civil legal relations is primarily determined by their ability to meet various needs of subjects. In the context of economic theory, the concept of object value is inextricably linked with its own value, which, in turn, is determined by various factors. Analyzing modern economic doctrines makes it possible to distinguish the main determinants of the value of economic boons as follows:

- cost price, which represents the cost expression of resources used when producing in addition to selling products [10];
- utility (subjective value), which reflects the property (ability) of goods to satisfy specific consumer needs, taking into account its marginal utility [11];

- availability, which includes aspects such as the rarity or exclusivity of an object, and is partly the result of marketing along with its impact on sales evolution.

All the three mentioned factors definitely have an interrelated influence on each other, therefore, the final outcome, specifically, determining the value of a certain good for a particular subject, depends on the combination of their overall impact.

In the modern economic context, although the cost price remains a crucial factor in determining the final value of an object, its influence largely recedes from other factors influence mentioned above. At the same time, it should be noted that determining the cost of intangible assets is a complicated task, sometimes even an impossible one. For instance, creating a certain type of digital thing may require minimal material costs, while the process of 'mining' cryptocurrencies is an exceeedingly resource-intensive activity.

Of importantce is that cryptocurrency developers shall realize the thing that their value can widely fluctuate, from several thousand to hundreds of thousands of dollars, sometimes even more. Opting for open-source blockchain platforms such as Ethereum may reduce costs by leveraging existing infrastructure. However, developing your own blockchain or using specialized technologies may drastically increase them.

The costs of developing minutes together with smart contracts, creating digital wallets, conducting security audits, licensing, regulation, marketing initiatives, support and development, as well as consulting services of lawyers and other specialists shall also be taken into consideration. All these aspects are extremely crucial so as to ensure effective product presentation, compliance with regulatory requirements in the field of circulation, in addition to increasing the investment attractiveness of the project.

When creating a virtual asset, it is important to consider the costs associated with its issuance along with distribution, usually determined by the chosen distribution strategy. In the case of organizing and conducting an ICO (Initial Coin Offering) or IEO (Initial Exchange Offering), related costs include marketing activities, legal support, audits, as well as other elements necessary for a successful public sale. Alternatively, using private sales or other distribution methods may reduce costs.

Taking into account the provisions of the draft LoU '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' [4], the purely 'production' costs will still need to be added significant amounts of fees 'for regulation.'

Due to the mentioned factors, the cost of creating a digital thing can dramatically vary depending on its type, platform/ technology, jurisdiction, etc.

Thus, the key determinant defining the value of virtual assets for an entity is their ability to meet certain needs of the latter. Fundamentally, the specified ability depends on exceptional needs that the virtual assets are supposed to satisfy. Considering the variety of such needs [12], digital things can meet a wide range of them. In accordance with their functionality and purpose, it makes it possible to classify digital things created to meet specific needs of participants in legal relations [13]. Instead, the lawmaker, suggesting the consolidation of the legal classification of virtual assets, offers a slightly different criterion. Namely, borrowing the MiCA approach to some extent, this classification is based on a virtual asset aiming to stabilize its value by referring to other assets. Without analyzing discrepancies between the provisions of MiCA together with domestic draft laws, the following four groups of virtual assets may be conventionally defined:

- 'electronic money tokens' (e-money tokens) – virtual assets whose value is merely referred to one official currency (most likely, it is supposed to be referred to the official monetary unit of the state, to clarify, such a virtual asset should replace the so-called 'electronic money' [14-16]);

- 'asset-referenced tokens' (ART) – those virtual assets that have a connection, in particular in terms of value, with other objects (the stated can be divided into those tied to specific property rights (to illustrate, the right of claim and that of ownership) and directly testify to the latter, in

addition to those having only a value reference, for example, to the value of a certain commodity on the stock exchange, or currency – the so-called 'cryptocurrencies');

- 'utility tokens' – a virtual asset intended exclusively for granting the right to demand property transfer or service provision ensured by the issuer of such a token, in accordance with the terms of issuance of the latter;
- 'unclassified virtual assets' – those not falling under the above characteristics, exceptionally, the value of which is referred to other virtual assets.

The specified approach enables covering a fairly wide range of such objects as digital things though leaving 'room for maneuver' for the future results of technology development. The only criterion that should distinguish virtual assets from other digital things is the use of blockchain technology or similar ones. The aforementioned approach is implemented by the EU in MiCA and further proposed to be implemented in domestic legislation. The attribution of NFTs as virtual assets, in turn, is diversely regulated in the said acts. Thus, it is explicitly stated by MiCA that its provisions do not apply to 'crypto-assets that are unique but not interchangeable with other crypto-assets, including digital art and collectibles.' Instead, the suggested amendments to the LoU on 'Virtual Assets' contain provisions on non-interchangeable virtual assets.

All the mentioned types as well as groups of digital things, specifically, virtual assets, are designed to perform sufficiently diverse functions so as to meet the needs of subjects. In particular, but not exclusively, the following can be specified:

- payment function – electronic money tokens and in some cases cryptocurrencies [17];
- certifying function – ART, NFT, to some extent service tokens, unclassified virtual assets, digital things that are not created on the basis of blockchain technology;
- investment function – cryptocurrencies, ART, NFT, etc.;
- supply function – all digital things applying Smart contracts;
- entertainment, collectible function, etc. – NFT, digital things of gaming virtual worlds.

The degree together with the relevance of each of the specified functions depends on the scope of digital thing application, its purpose, as well as the degree of compliance with the function and need. Therefore, in the context of studying utility as a component of digital boons value, it is impossible to unify their functional components. The only thing that unites all these digital things along with virtual assets is their use within the so-called digital environment mentioned above. To clarify, the factor determining their utility in terms of performing a certain function is compliance with the level of technological development of society in addition to the result of its digital transformation.

However, utility as a factor determining the value of a boon is not limited merely to functional load. Depending on the needs of a person, his satisfaction can be ensured due to other features together with properties of the boon. To illustrate with an example, by consuming some goodies, humans meet both the need for food along with that one for good emotions. Consequently, digital boons can also possess such characteristics which allow satisfying not only those needs determined by their functional purpose.

In this aspect, a recent study of factors affecting consumer trust in virtual assets, namely, cryptocurrencies [18], turned out to be of an incredible interest. Undoubtedly, the above feeling determines society's perception of digital things as new boons, whereas its level is positively influenced by exactly those properties as well as characteristics, the presence of which has been indicated above.

The popularity together with the value of virtual assets in the modern financial and economic sphere is determined by several key aspects, among which pseudonymity and a high level of security as well as stability of transactions occupy an exceptional place. The stated is especially related to cryptocurrencies based on blockchain technology. Pseudonymity, which implies participation in

legal relations not under a real name, but under a conventionally chosen pseudonym or nickname, is one of the key features of such transactions. Registration data, including wallets, keys along with virtual assets themselves, are referred to specific accounts identified with help of chosen nicknames and passwords. This aspect of systems functioning within virtual assets turnover attracts participants interested in preserving the anonymity of their assets together with transactions carried out with them.

Instead, being able to 'store' funds in addition to carrying out transactions without personal data disclosure certainly appeals to unscrupulous participants, including criminal elements along with terrorist organizations. The 2019-2020-year studies proved the fact that approximately a quarter of all Bitcoin users together with almost half of Bitcoin transactions are related to illegal activity [19], while the lack of proper legal regulation of Initial Token Offerings (ICO) leads to abuse and fraudulent intentions of unscrupulous participants [20]. To elucidate, this fact has not been left unnoticed by the international community together with the legal systems of individual states, which have developed and are already implementing or planning to implement regulatory acts aimed at regulating the specified relations [21]. Furthermore, new approaches as a basis for law-making activities are also being researched and developed at the doctrinal level [22]. The above exceptionally includes the complete or partial restriction of pseudonymity while cryptocurrency transactions.

However, the very nature of virtual assets as well as the primary motives for their creation are based on the desire to avoid public authorities intervention in the relevant financial relations [23]. The latter is achieved, particularly, due to the existence of an informal connection between the object (cryptocurrency) and the subject (wallet owner or user), which is one of the key characteristics of the specified area.

Therefore, the full introduction of public control over transactions with cryptocurrencies is obviously a complicated task due to technical adaptability along with ongoing development of relevant technologies as well as due to the intention of certain subjects to avoid state regulation. Nevertheless, it can be stated that cryptocurrencies are gradually losing such a characteristic as the lack of a formal connection between assets and their owners, especially in the context of their use in the legal sphere. Despite the inclination of virtual asset market subjects to decentralize and get out of the influence of state institutions, the influence of the law on the former, as noted by scientists, can be decisive [24].

Another significant aspect affecting the value of virtual assets is the level of transaction security. Blockchain technology is quite resistant to external influences [25] in view of the fact that the aforementioned provides almost complete protection against unauthorized or illegal interference in transactions, whereas any endevours of the stated interference can be detected and traced.

The property of the specified technology ensures cryptocurrencies together with other virtual assets based on it to be one of the most secure tools for making payments or saving funds. However, it should be borne in mind that existing pseudonymity, when identification is not carried out through a real subject, but through an account or registration record, can bring to serious consequences, including irreversible loss of a virtual asset. The peculiarities of virtual assets turnover, specifically, cryptocurrencies, determine a certain range of 'weak points' while ensuring their safety. Taking into account the growing interest of hackers in highly popular virtual assets, it can be noted that encroachments of the latter can manifest themselves in the form of theft, to precise, directly from the online wallet by hacking the service or illegal actions of the service administrator; when converting it into fiat (real) money; by phishing, which consists in gaining access to the owner's personal data along with keys to the wallet; by obtaining access to a personal computer, laptop, smartphone, flash drive or even a piece of paper containing access keys to cryptowallets. Moreover, illegal possession of a virtual asset may be resulted from fraudulent or other actions possessing characteristics of criminal offenses, explicitly those against property. The technological features of virtual assets determining their low vulnerability to certain types of illegal encroachments are not absolute. The development of security systems evolutionarily leads to the development of opposite systems and means [26].

The same development of technologies also determines the following property of digital things impacting their value, namely, accessibility. As noted at the beginning of the study, digital things exist exclusively within the so-called 'digital environment.' Although virtual assets require the presence of

a certain system enabling their turnover, the distribution of technologies providing access to such systems on the basis of the World Wide Web is constantly bringing to the fact that a person will be capable to meet his needs with the appropriate digital boon at any place as well as time.

In spite of the above stated, accessibility characterizes not only the immediate boon availability, but also affects the availability of satisfying such needs, for which a person would have to perform many more actions, including specific ones, in addition to applying traditional methods, for instance, using mechanisms for investments. Cryptocurrencies along with other virtual assets (ART, NFT) provide an excellent opportunity for the specified in a fairly simplified procedure than may occur, for example, when using banking services. In addition, the financial entry threshold is reduced and transaction security is improved [27]. Utility tokens have significantly expanded the scope of attracting financing for small and medium-sized projects as well as startups. Tokenization of various public life spheres, to specify, the economic and legal ones, is gaining momentum [28]. According to certain researchers, the above mentioned factors bring society closer to solving (albeit not complete) global economic problems, in particular, that of economic inequality [29].

5. Conclusions.

Defining the factors that determine the value of digital things and virtual assets as objects of civil rights of a person, it should be noted that such a traditional component of economic value as the cost price of a boon has practically no influence on the formation of the latter. The cost of mining (where necessary) together with potential 'regulatory' payments for the opportunity to participate in the virtual asset market are drastically inferior in this impact to other features as well as properties of digital boons. Regardless of mediating the scope of applying corresponding digital things, functional capabilities are overwhelmingly only analogues of other boons, mechanisms along with methods existed earlier (to illustrate, securities, cashless payments, etc.). Therefore, the specific properties of digital boons come to the fore, in turn, determining both the prevalence and the value of the latter for the subjects of public relations.

Among the stated the following should be noted:

Technologicality is the compliance with the level of technology and society, thus, public relations development, the possibility of using digital things as analogues of recognized boons, but in a new digital environment.

Security is mainly based on the use of blockchain technology, the property of transactions with virtual assets to be primarily immune to conventional illegal encroachments.

Decentralization is a relative (taking into account trends in legislation development) property of digital boons to exceed public regulation limits.

Pseudonymity is a feature allowing owners of digital things to confirm and exercise their rights without person's identity.

Accessibility is both digital boons themselves together with the availability of meeting certain needs with the help of the appropriate virtual assets.

It should be elucidated that the above list may not be exhaustive. The possibility of an unlimited number and variety of digital things along with virtual assets existence enables determining other, explicitly specific features together with characteristics of such boons. However, the properties of digital boons stated in the paper are the most common and inherent ones in the predominant number of digital things. At the same time, some of the aforementioned may have the opposite significance in order to form a digital boon value. To clarify, pseudonymity can make the protection of violated rights to digital things complicated, while such a manifestation of decentralization as the lack of proper legal regulation makes the specified protection impossible at all. In addition, it should be emphasized that some characteristic features along with properties of digital things and virtual assets defined in the paper, although being fundamental to their nature, are subject to external influence as well as changes in their significance when forming the value of the corresponding

boon. Of a particular importance is the fact that pseudonymity and decentralization of current regulation are rapidly losing the possibility of such influence due to the powerful development of legal regulation of relevant relations in roughly the majority of world jurisdictions.

Summarizing the above stated, it should be noted that the result of this study was the definition of the value aspect of a digital thing as a component of the object of civil rights of a person. Determining the factors that influence the formation of the specified value should be of a particular interest for further research of the legal nature of digital things and virtual assets as generalized phenomena as well as their individual types, the specifics of regulating relevant relations, in addition to those of protecting the rights and interests of individuals to these objects.

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Anton Donets,
PhD in Law, Assistant of the Department of Civil Law,
Yaroslav Mudryi National Law University,
E-mail: a.g.donets@nlu.edu.ua
ORCID: 0000-0003-3798-2311