LEGAL CONSTRUCTION AND AMENDMENT TO PROMOTE BLOCKCHAIN APPLICATIONS: INTERNATIONAL EXPERIENCES AND RECOMMENDATIONS FOR VIETNAM

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Summary:

The outstanding characteristics of blockchain technology, along with the prevalence of crypto assets, cryptocurrencies, and other applications of the technology can positively contribute to innovation, economic development, and breakthrough growth for Vietnam. Learning from developed countries when constructing and amending Vietnamese laws to promote blockchain technology applications is necessary. From a comprehensive study of regulatory approaches and legal frameworks amendment to promote blockchain applications in such countries as Japan, the United States, and the European Union, the authors suggest some recommendations for revising and amending the relevant legal documents in Vietnam.

Keywords: *Innovation; Policy; Blockchain; Crypto asset.*

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1. Introduction

Blockchain technology, along with artificial intelligence technology and big data, brings opportunities and challenges not only to businesses but also to state management agencies in formulating policies for the development of national science, technology and innovation (STI). Blockchain technology is still a new technology, with a race between large companies and technology powers. If effectively deployed in a solid legal environment, blockchain technology not only improves the quality of services and information management but can also bring about profound changes in many socio-economic activities.

Decision No. 1236/QD-TTg dated October 22, 2024, of the Prime Minister promulgating the National Strategy on application and development of blockchain technology to 2025, with a vision to 2030, "improving the legal

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environment" is ranked as a priority among 5 groups of activities. The Ministry of Justice, the Ministry of Science and Technology, and relevant ministries and branches are tasked with "reviewing, researching, and assessing the impact of the current legal corridor on blockchain solutions and applications".

2. Overview of blockchain technology and its applications

2.1. Overview of blockchain technology

Blockchain technology is a decentralized technology or *distributed ledger* based on which transaction information is stored anonymously. This information can be likened to a ledger that is stored simultaneously on all computers or servers in the network, also known as network nodes, like an accounting record with thousands of copies throughout the computer network. This ledger includes continuous and complete chains of information on all transactions performed and is grouped into data blocks. Each data block can only be added to the chain if all network nodes with extremely large computing power reach consensus or have the same result about the next valid block that will be added to the chain. In principle, any edit/change of information in a block of data that has been validated and entered the blockchain will result in incompatibility with copies kept in other nodes of the blockchain and will not be accepted by the system.

Smart contracts (SC) in blockchain technology: The US National Institute of Standards and Technology defines SC as "a set of code and data (sometimes called functions and states) implemented by digitally signed transactions on a blockchain network" [2].

2.2. Applications of blockchain technology:

Blockchain technology has been and is being applied in many fields across various countries, specifically:

- *In the banking sector,* blockchain technology applications can be classified into 4 main groups: payment, fraud prevention, customer credit assessment, and supply chain financing.

- *In the financial sector,* the *concept of decentralized finance* (DeFi) appeared with cryptocurrencies and blockchain technology, which are used to manage financial transactions. Instead of being processed through a third-party intermediary, activities in DeFi take place through smart contracts on the

[2] Source: https://csrc.nist.gov/glossary/term/smart_contract#:~:text=Definitions%3A,transactions%20on%20the%20blockchain%20network.

blockchain platform. DeFi projects with decentralized applications have attracted investment capital of up to billions of USD from many banks and investment funds around the world.

- *Cryptocurrency* is a combination of cryptography and currency and is the most popular and influential application of blockchain technology up to now. Cryptocurrency can be defined as digital currency secured by encryption techniques based on the exploitation of the power of blockchain technology. The most popular cryptocurrencies, recognized by many organizations around the world and with the most value today, are Bitcoin and Ethereum. To date, the total estimated value of cryptocurrencies in the world is about 2.32 trillion USD[3].

- *In the insurance sector,* blockchain technology with the feature of smart contracts combined with AI technology can: (i) prevent unauthorized access and change of data such as customer information, and insurance value; (ii) reduce operating costs: storing customer and related party information is often time-consuming, and in many cases, requires continuous updating, making management challenging and increasing costs. The SC feature will reduce manual operations such as updating and modifying data; (iii) detect fraud in insurance claims; (iv) connect data, scan, and trace the origin of all customer transactions to verify the authenticity of insurance claims.

- *In the field of manufacturing, supply chain, and logistics*, blockchain technology applications can be classified into three main groups: goods traceability, process automation, and asset management in the supply chain. For traceability of goods, blockchain technology allows tracking the entire journey of a product from its origin to the consumer, which is especially important in the food, pharmaceutical, and luxury goods industries. For process automation, SC can automatically perform processes such as payment, transfer of ownership, and customs clearance, minimizing paperwork and manual intervention, and saving time and costs. For asset management in the supply chain, blockchain technology can track inventory in real-time, helping to optimize warehouse management and reduce costs.

- *In the field of education,* blockchain technology allows degrees and certificates to be stored securely and transparently on the blockchain, making it easy to verify authenticity and prevent counterfeiting. SC can automatically award degrees when students complete course requirements, reducing administrative time and costs. Schools can use SC to automate the payment process for tuition, scholarships, and grants, thereby reducing administrative costs and minimizing the risk of fraud or non-transparency (*Azad et al., 2023*).

[3] Source: https://coinmarketcap.com/

3. Main legal issues related to blockchain technology applications and legal construction and amendment experiences of some countries in the world

Legal issues related to blockchain technology applications can be classified into two main groups: (1) Legal issues related to Crypto assets, especially cryptocurrencies; (2) Other legal issues related to other applications of blockchain technology.

3.1. Legal issues related to crypto assets: legal construction and adjustment experiences of Japan, the US, and the EU

Crypto assets (CA) are gradually becoming a standard legal term to define the assets derived from blockchain technology applications. There is no specific time marking the birth of this term, but it has gradually been formed and popularized over time. Before 2010, the term CA did not appear, at this stage Bitcoin was gradually becoming known and considered as a form of digital currency.

In the period 2010-2017, along with the development of Bitcoin, alternative cryptocurrencies altcoin (short for alternative coin) began to appear. However, in 2017, with the explosion of the first coin issuances (Initial Coin Offering, abbreviated as ICO) - a method of raising capital for cryptocurrencies, the term CA began to be widely used to cover all types of assets built on blockchain technology, including security tokens and utility tokens.

In the scope of the article, Japan, the United States, and the EU will be the countries and regions referred to for legal regulations related to CA.

3.1.1. Japan - a pioneer in crypto assets classification with a balanced approach

➢ *Definition and classification of crypto assets*

Japan is the first country to classify tokens generated by blockchain technology. Japan classifies tokens into 3 types:

- Securities tokens: have the characteristics of securities and are subject to the regulation of securities law;
- Payment tokens, some countries such as the UK, and Switzerland later use the equivalent term exchange tokens: not securities tokens, can be used as a means of payment in a certain community, without the need for a centralized intermediary;
- Utility tokens, some countries such as the US, Singapore, and EU use the equivalent term access tokens: not securities and payment tokens, used to access and use a certain service.

The definition of CA under Japanese law *does not include* security tokens, so *it is not* subject to be regulated by the Financial Instruments and Exchange Act (FIEA) but is subject to be regulated by the Payment Service Act (PSA). PSA classifies CA into 2 types:

- Type I CA: Asset value stored on electronic devices or other means through electronic means, excluding Japanese currency or foreign currency and assets valued in money, transferable through electronic data processing systems, and can be: (i) used for payment when purchasing or renting goods or services from an unidentified party, and (ii) bought or sold that CA with an unidentified party. Therefore, payment tokens (cryptocurrencies) such as Bitcoin and Ethereum are Type I CA;
- Type II CA: Is the value of the asset that can be used to exchange at par with CA I in transactions with unidentified parties through an electronic data processing system. Therefore, most utility tokens, such as Uniswap's Uni, are Type II CA.

Stablecoins, a type of coin with a mechanism to ensure that their value is in a more stable state by anchoring their value to another stable asset such as gold or fiat/legal money (e.g., USD), *are not included* in the definition of CA but are classified as *electronic payment instruments* (EPI) according to PSA.

➢ *Crypto assets management method:*

- Companies participating in the buying and selling of CA, called Crypto Asset Exchange Service (CAES), must register as Crypto Asset Exchange Service Provider (CAESP);
- Companies participating in the buying and selling of stablecoins (belonging to the EPI group) must register as Electronic Payment Instruments Exchange Service Providers (EPIESP);
- The Financial Services Agency (FSA) under the Ministry of Finance of Japan is the agency that reviews, registers, and supervises CAESPs and EPIESPs.

A CAESP that wants to trade a new CA (such as a new cryptocurrency based on blockchain technology) must register with the FSA. In addition, this business must be a member of the Japan Virtual and Crypto Assets Exchange Association (JVCEA) - a self-regulatory organization of CAESPs established under the FSA's regulations. The JVCEA will also assess the new CA according to its internal assessment process. A new CA will only be accepted for circulation if it passes the JVCEA's examination *(Nguyen Huy Hoang Nam, 2022).*

➢ *Stablecoin Management:*

Stablecoins are not covered by the definition of CA but are classified as *electronic payment instruments* (EPI) under the PSA as stated above. Businesses that engage in the buying, selling, or exchanging of EPI (as well as intermediary activities for such activities) or manage EPI for the benefit of others, must register as *Electronic Payment Instruments Exchange Service Providers* (EPIESP). However, algorithmic[4] stablecoins that are not collateralized by fiat currency but whose value is linked to fiat currency through algorithms, are not considered EPI. Instead, these algorithmic stablecoins will be classified as CA if they can be transferred or traded with unknown parties on the blockchain.

According to the Partial Amendment to the PSA, effective from 01/06/2023: currency-denominated stablecoins are distinguished from other currency-denominated assets by the following factors:

- Whether they are used to make payments to unknown parties;
- Whether they are bought or sold to unknown parties.

An EPIESP must comply with strict anti-money laundering and counterterrorist financing regulations, including the Travel Rule[5].

➢ *Travel Rule and Anti-Money Laundering Requirement*

Travel Rule

According to Japanese law, only banks or licensed money transfer service providers can provide money transfer services. From the technical aspect, CA is not money. However, it is possible to interpret the money transfer transaction involving CA as part of the money transfer system, in which case the service provider may be providing money transfer services by transferring CA. Furthermore, the issuance of EPI such as stablecoins pegged to fiat money would also be engaging in money transfer transactions.

Anti-Money Laundering Requirements

Under the Law on Prevention of Transfer of Criminal Proceeds, CAESPs and EPIESPs are required to: (i) conduct Know-your-customer (KYC) checks on customers and persons with substantial control over the customer's business to conduct transactions and business; (ii) prepare KYC documents and transaction records; (iii) maintain records for seven years; and (iv) report

[4] *Algorithmic stable coins* are a type of stable coin whose value is maintained through algorithms that automatically adjust the supply, rather than relying on collateral like fiat currency or gold. These stable coins typically operate on a "supply reduction when the price is low" and "supply increase when the price is high" mechanism. Although the idea is attractive, these stable coins are highly risky if the algorithm does not work well.

[5] The Travel Rule is a FATF's anti-money laundering and counter-terrorism financing (AML/CFT) rule that requires money transfer organizations to collect and share information about senders and recipients in transactions exceeding a certain threshold (e.g., $1,000/EU or more).

suspicious transactions to the appropriate authorities, among other requirements.

Travel Information Exchange Rule[6]

When a CAESP or EPIESP transfers a CA or electronic payment instrument to a customer of another CAESP (including any other foreign CAESP or EPIESP) at the request of the customer, the CAESP or EPIESP must provide the receiving CAESP or EPIESP with certain identifying information, including the name and blockchain address of the sender and recipient in accordance with the Travel Information Exchange Rule. However, transfers to CAESPs or EPIESPs in countries that have not adopted the Travel Rule are not subject to the Travel Rule. Additionally, when a CAESP or EPIESP transfers a CA or EPI to an unhosted wallet[7] at the request of a customer, it is not subject to the Travel Rule.

However, even for transactions that are not subject to the Exchange of Information in Transactions Rule, information about the counterparties (name, blockchain address, etc.) must be collected and recorded. Furthermore, Japanese lawmakers are still in the process of researching and analyzing the properties or nature of non-custodial wallets to assess the risks involved.

3.1.2. United States: New CA Policy Under New Administration

➢ *Regulatory Approach to CA*

Cryptocurrencies have become the focus for both the federal and state governments in the United States. At the federal level, most of the focus has been on the administrative and agency levels, including the Securities and Exchange Commission (SEC), the Commodity Futures Trading Commission (CFTC), the Federal Trade Commission (FTC), the Department of the Treasury through the Internal Revenue Service, the Office of the Comptroller of the Currency, and the Financial Crimes Enforcement Network (FinCEN). Despite the significant involvement of these agencies, the development of regulations has been inadequate.

The United States Congress has also recently introduced several bills aimed at providing greater clarity for CA. Notably, the draft Financial Innovation and Technology for the 21st Century Act[8] (FIT21) is highly anticipated and

[6] The Travel Rule is a regulation issued by FAFT, applied by many countries including Japan, to monitor the CA and EPI transactions with the main goal of preventing money laundering and combating terrorist financing. This regulation requires the collection, storage and sharing of information between parties involved in cryptocurrency transactions when the transaction value exceeds a certain threshold.

[7] An unhosted wallet is a type of cryptocurrency wallet that the user has complete control over, without relying on any third party or service provider to manage the wallet's information, private keys, or transactions.

[8] Source: https://www.congress.gov/bill/118th-congress/house-bill/4763

appreciated by the US crypto community as it codifies a clear legal framework to determine whether CAs are securities or commodities. Under FIT21, the CFTC will have *exclusive jurisdiction* over a token that qualifies as *an ancillary asset*[9] and *not a security constituting an investment contract*. To qualify as an ancillary asset, the token must not provide the holder with any financial rights in the business, such as debt or equity, liquidation, interest payments, or dividends.

However, when the average daily aggregate value of transactions in the supporting asset exceeds a certain threshold, and when the token issuer engages in "business or management efforts that are primarily intended to determine the value of the supporting asset", the token issuer will be required to report these details to the SEC, which will have a role in reviewing and monitoring this issue.

FIT21 also grants primary jurisdiction[10] to the CFTC over digital asset markets. The bill details the process that the market participants and regulators must follow in allocating oversight of digital assets between the SEC and the CFTC. A digital asset that is classified as a digital commodity will be subject to CFTC regulation if the blockchain network associated with the digital asset is *operational and certified as decentralized*. The classification is clear and simple enough for any person (whether involved in the development of the network) to verify the status of an asset as a digital commodity. Networks will be certified as decentralized by the CFTC, unless the SEC objects within 30 days of the CFTC's certification, and the SEC must provide a detailed analysis of the reasons for the objection. FIT21 has been passed by the House of Representatives and sent to the Senate. However, the bill has been postponed for consideration in the Senate until the results of the US Presidential and Congressional elections (the entire House of Representatives and 1/3 of the Senate) in November 2024. It is likely that FIT21 will be passed by the Senate and signed into law by President Donald Trump in early 2025.

- *Money Transmitter Act and Anti-Money Laundering Regulations*

[9] Ancillary assets are assets that are not primary assets but can support or supplement the primary asset. They may play a supporting role in creating value or providing additional benefits, but they are not considered the core assets that generate the company's main revenue. In the CA field, the concept of ancillary assets can be used to describe types of CA that are not securities but are related to a particular project or platform. A token can be considered an auxiliary asset if it does not represent ownership or profit from a company, but still has value in providing access or functionality within a crypto ecosystem, such as a utility token.

[10] Primary jurisdiction is a principle in administrative law where an administrative agency has the authority to decide issues that a court would not normally be able to resolve immediately. Accordingly, if a case involves issues that fall within the specific jurisdiction of an administrative agency, the court may suspend or dismiss a party's request until a decision is made by that agency.

Under the Bank Secrecy Act, FinCEN regulates money service businesses (MSBs). On March 18, 2013, FinCEN issued guidance specifying that the following entities will be considered as MSBs:

(i) Virtual currency exchanges (known as digital currencies);

(ii) Administrators of virtual currency vaults that issue and redeem digital currencies.

An MSB that operates as a money transmitter must conduct a comprehensive risk assessment of its exposure to money laundering and must implement an anti-money laundering program accordingly. FinCEN regulations require MSBs to develop, implement, and maintain a written program that is reasonably designed to prevent the exploitation, facilitation, and financing of money laundering and terrorist financing.

All U.S. citizens are also prohibited from doing business with foreign nationals on the Treasury Department's Office of Foreign Assets Control's "blacklist," called the Specially Designated Nationals and Blocked Persons List (SDN List). The SDN List is updated regularly and can be searched at https://sanctionssearch.ofac.treas.gov.

3.1.3. The European Union (EU) introduces the Markets in Crypto Assets Regulation 2023, the term CA is expected to become the standard in legal documents of many other countries

The Markets in Crypto Assets Regulation[11] (MICA) is the first set of regulations establishing unified market rules for crypto assets in the EU, discussed in September 2020 and adopted in May 2023. MICA was drafted by the European Commission, with coordination and discussion from the EU Parliament, the EU Council, and the financial supervisory authorities, such as the European Banking Authority (EBA) and the European Securities and Markets Authority (ESMA). MICA was officially published on June 9, 2023, in the Official Journal of the EU, a milestone that will see the term CA become a standard in the legal documents of many other countries in the future. MICA defines "*CA as a digital representation of a value or a right that can be transferred and electronically stored using distributed ledger technology or similar technology*".

➢ *Classification of CA*

MICA classifies CA into 4 main types:

- Cryptocurrency tokens: These are CAs designed to maintain stable value by referencing the value of an official currency. Examples of stablecoins

[11] Source: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1114

such as USDT (Tether), and USDC (Circle) are tied to the USD, or EURS (Statis), EURC (Circle), and EURT (Tether) are tied to the Euro.

- Asset-referenced tokens: These are CAs designed to maintain stable value by referencing the value of another asset or non-currency interest, or a combination of assets and interests. For example, Tether Gold is tied to the value of gold.
- Utility tokens: These are CAs that are intended solely to provide access to a product or service provided by the issuer. For example, Siacoin (used in the Sia storage network), OMG (currency of the OMG network), and REP (for Augur software users).
- Other CAs: are types of CAs that do not fall into the above 3 categories.

This definition includes a wide range of CAs, but MICA also excludes some types in the scope of regulation, specifically:

(1) *Central bank digital currency* (CBDC), because CBDC is issued by the Central Bank and has a different legal status than private CAs.

(2) *Security tokens,* because they are already regulated by other current EU regulations for the securities market.

(3) *Non-fungible tokens* (NFTs) *representing unique and single assets*: MICA only applies to NFTs issued as a collection. NFTs representing unique assets, such as a specific work of art, are not subject to MICA.

The classification and exclusion of the above types of tokens is because they are already covered by existing EU financial regulations. MICA only focuses on regulating under-regulated CAs. From 30 June 2024, the public offering or listing of crypto-currency tokens and asset-backed tokens will be subject to a strict regulatory regime, like the legal framework applicable to financial instruments.

Table 1. Summary of MICA regulatory requirements for token types[12]

	Cryptocurrency tokens	**Asset-referenced tokens**	**Other Tokens**
White Paper	Yes	Yes	Yes
Authority Approvals	Yes	Yes	
Private Key Security Requirements	Yes	Yes	
Marketing Plan Review	Yes	Yes	
Supervisory Bodies	Yes	Yes	Yes

[12] Source: https://tapchibitcoin.io/mica-do-eu-dan-dau-se-la-kim-chi-nam-de-that-chat-cac-quy-dinh-toan-cau.html

➢ *For CA services*

The area where MICA can impact the widest range of CA market participants is the provision of CA services. From 30 December 2024, the provision of CA services in the EU can only be carried out by legal entities that have been licensed as CA service providers under MICA. CA services include: (i) custody services; (ii) operation of a transaction platform for CA; (iii) exchange services between CAs and fiat currencies or with other CAs; (iv) execution of CA transaction orders on behalf of clients; (v) provision of services for the preparation of contracts, receipt, and transmission of CA orders, (vi) advice on CAs; (vii) provision of CA portfolio management; and (viii) provision of CA money transfer services on behalf of clients.

Licensed CA service providers can offer their services cross-border in all EU jurisdictions, like the "EU passport" rights known in other EU financial services legislation. They will be subject to a range of requirements, depending on the type of service provided. Notably, MICA does not include a separate regime for CA service providers based outside the EU. Non-EU companies that plan to attract EU clients and/or promote and advertise their services in the EU are required to have an EU branch licensed as an EU CA service provider.

3.2. Legal issues related to other applications of blockchain technology

The application of blockchain technology does not stop at CA but is also applied in areas such as banking transactions, insurance, goods traceability, supply chain and logistics monitoring, granting, and storing educational certificates, performing, and confirming real estate transactions, etc. Most blockchain technology applications today rely on a crucial feature: the smart contract (SC). Some legal issues arising from the SC's feature are:

3.2.1. Jurisdiction issues

The fact that blockchain network nodes can be located anywhere in the world has made blockchain technology go beyond national management borders and raised many issues related to jurisdiction in contractual relationships. In countries, especially the UK, the US, and Australia, when handling a lawsuit, the first thing judges will consider is whether they have the right to hear the case, meaning they have jurisdiction within the legal scope, geographical scope for the two parties on the issue to be judged. Yang[13] (2023) proposed

[13] Source: https://stanford-jblp.pubpub.org/pub/jurisdiction-rules-blockchain/release/1

that instead of focusing *on conduct*[14], courts apply *the impact/effect test*[15] to determine jurisdiction. In particular, for security token transactions (a type of CA), the application of the *Morrison transaction test*[16] standard is always necessary.

3.2.2. Legal nature of Smart Contract

In the EU legal context, a smart contract (SC) is not generally considered a contract in the traditional sense. Instead, it is defined as "a digital instrument that facilitates the performance of the terms agreed between the parties to a contract" (*EU Data Law, 2022*)[17]. Technically, SC is computer code that automatically executes pre-programmed terms and conditions when certain conditions are met. They operate on the blockchain platform, ensuring transparency and immutability. There are two main situations related to SC:

(1) SC as an implementation tool: When the parties already have a traditional contract and use SC to automate the performance of the terms of that contract. In this case, SC is not an independent contract but only a means to perform obligations.

(2) SC as a Standalone Contract: When the parties rely solely on the SC without a traditional contract attached. In this case, the legality of the SC can be more complex and depends on whether its terms meet the legal requirements necessary for SC to be considered a valid contract under EU law.

Therefore, in the EU, whether a SC is considered a real contract depends on how and in what context it is used, as well as whether it meets the legal criteria necessary to be recognized as a valid contract or not.

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[14]*Conduct based jurisdiction* refers to the determination of a court's jurisdiction based on the defendant's conduct. This means that the court will look at the defendant's actions or activities to determine whether there is sufficient basis for the court to have jurisdiction over the case. In a legal context, if an individual or organization engages in conduct that involves or has a significant impact on a particular jurisdiction, then the court in that jurisdiction may have jurisdiction to hear the case. This is often applied in cases involving commercial, contractual, or tort cases that occur within the court's jurisdiction.

[15] *The impact/effects test* in jurisdiction is a principle used to determine which court has jurisdiction to hear a case, especially in cases involving infringements that occur on the internet or have cross-border effects. This principle focuses on where the consequences or effects of the infringement are most felt. More specifically, *the impact test considers* where the plaintiff suffered harm or loss because of the infringement. The court in the place where the infringement had the most significant impact will have jurisdiction to hear the case.

[16] *The Morrison transaction test* is a legal principle established by the US Supreme Court in the 2010 case of Morrison v. National Australia Bank Ltd. that is used to determine the scope of application of US securities laws to international transactions. US securities laws, specifically Section 10(b) of the Securities Exchange Act of 1934 and Rule 10b-5, under the Morrison transaction test, apply only to: (1) purchases or sales of securities made on US securities exchanges and/or (2) purchases or sales of other securities that occur in the US. This principle was established to limit the application of US securities laws to international transactions, to avoid unduly extending US jurisdiction over securities activities occurring outside its territory. Prior to this decision, US courts typically applied a variety of different criteria to determine jurisdiction, leading to inconsistency and unpredictability in the application of securities laws to international transactions.

[17] Source: https://www.engage.hoganlovells.com/knowledgeservices/news/eu-data-act-part-8-smart-contracts

Similarly, SCs are not necessarily considered to be legal contracts under US law[18]. Some of the main reasons are:

(1) Lack of legal elements: A traditional legal contract requires the consent of the parties, a clear object, and an exchange of value (consideration). SC are essentially pieces of code that execute automatically when certain conditions are met and do not necessarily require explicit consent or an exchange of value in the way that law requires.

(2) Lack of flexibility: Legal contracts can often be modified or revoked by the parties involved if there is consensus to do so. However, SC is usually not changeable once deployed on the blockchain, unless specific provisions allow for it.

(3) Lack of legal recognition: Currently, there is little clear legal regulation of SC in US law. Some states, such as Arizona and Nevada, have made strides in recognizing SC by specifying specific requirements, but this is not yet widespread nationwide.

According to Chinese legislators, the current provisions of Chinese law on contracts, electronic transactions, and other specialized laws have established a legal framework to regulate SC (*Nguyen Thi Minh Phuong & Phan Van Anh, 2023*). This view is similar to that of legislators of many other countries and regions in the world, such as the European Union and the United States. For example, Article 48 of the Law on Electronic Transactions of China stipulates "presumption of the capacity of subjects", in which "parties participating in e-commerce activities are presumed to have the full civil capacity to perform corresponding legal acts unless there is evidence to prove the contrary".

3.2.3. Intellectual Property Rights (IPR) Issues

Lawsuits involving non-fungible tokens (NFTs) demonstrate that US IP laws are still being interpreted and are capable of governing NFTs. A report[19] by the United States Patent and Trademark Office (USPTO) and the US Copyright Office in March 2024 stated that the country's current IP laws do not need to be changed to address the concerns about infringement related to the use of NFTs. It can be affirmed that NFTs only represent ownership or other rights to a specific asset, meaning that the creator of an NFT must avoid infringing on the copyrights of others and at the same time implement measures to protect their copyrights. Vietnam's current IP laws can also be interpreted and do not need to be changed to address IP infringement related to the use of NFTs.

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[18] Source: https://www.bitlaw.com/blockchain/smart-contracts.html

[19] Source: https://www.globallegalpost.com/news/changes-to-ip-laws-not-necessary-to-deal-with-nfts-says-report-1926617422

4. Some suggestions on the direction of supplementing and amending current laws and draft laws of Vietnam in the direction of creating favorable conditions for blockchain technology applications

4.1. Identifying the legal nature of digital assets (including crypto assets)

4.1.1. Affirming digital assets as property

Currently, according to Article 105 of the Civil Code, property exists in one of four forms: objects, money, valuable papers, and property rights. It can be affirmed that digital assets are property, a type of property right, and belong to the group of movable/personal property and supplementing property rights that *can be recorded electronically* in the Civil Code.

4.1.2. Crypto assets as a Type of Digital Assets

The Draft Law on Digital Technology Industry uses the term "digital assets" to replace "CA - crypto assets" with the definition "*Digital assets are digital technology products created, issued, stored, transferred and authenticated the ownership by blockchain technology that people have the right to own according to the provisions of civil law and relevant laws*".

According to the research team, this definition is not consistent with the definitions of countries and international financial supervision organizations at the present stage. Legislative experts can consider adjusting the definition in the draft Law on Digital Technology as follows: "*Digital assets are products created, issued, stored, transferred, and authenticated ownership through digital technology*".

In addition, it is possible to consider adding the definition of crypto assets in the EU's MICA: "*Crypto assets (CA) are a digital representation of a value or a right that can be transferred and stored electronically by using distributed ledger technology or similar technology*". Distributed ledger technology or similar technology is digital technology; therefore, CA is a type of digital asset.

4.1.3. Classify CA into 2 main groups: the group with the nature of securities and the group with the nature of non-securities (according to the approach of FIT21 of the United States)

For CAs with the nature of securities (*securities tokens*):

According to Article 4, Clause 1 of the Securities Law 2019, securities include the following types:

- Stocks, bonds, fund certificates;
- Warrants, secured warrants, stock purchase rights, and depository certificates;

- Derivative securities;
- Other types of securities regulated by the Government.

CA with the nature of securities can therefore be classified as "Other types of securities regulated by the Government". A prominent criterion that can be considered whether a token has the nature of securities or not is to determine whether the token specification is created by a blockchain network based on a completely decentralized mechanism according to the US FIT21 Bill. If the operating mechanism of that network is not decentralized, that token is likely to be a security token and falls under the scope of regulation of the Securities Law.

4.1.4. For non-securities CAs

The group of non-securities CAs can be considered 4 types (according to the approach of EU's MICA), namely: (i) *electronic tokens*; (ii) *asset reference tokens*; (iii) *utility tokens*; and (iv) *Other non-securities CAs*.

We suggest a specialized agency to manage, formulate policies, and supervise the activities of non-securities CAs in Vietnam. It is also necessary to establish and empower a specialized national agency to manage and supervise activities related to CAs like the FSA under the Ministry of Finance in Japan.

4.2. Identify the legal nature of smart contracts (SCs)

Article 3, Clause 6 of the Law on Electronic Transactions amended in 2023 defines: "An electronic contract is a contract established in the form of data". Article 34 Clause 1 of the 2023 amended Law on Electronic Transactions defines: "An e-contract shall be concluded or executed from the interaction between an automated information system and a person or among automated information systems and its legal value cannot be denied for the sole reason that any inspection or intervention of human in each specific action performed by the automated information systems or in the contract is not made".

Based on this definition, it can be affirmed that an SC is a type of electronic contract, even if "*there is no human inspection or intervention in each specific action performed by the automated information systems instead of human"*. However, referring to the legal perspective of the EU and the US, not all SCs have the legal value of a contract. Therefore, it can be considered that the parties participating in the SC are assumed to have the full civil legal capacity and civil conduct capacity to perform the corresponding legal acts unless proven otherwise, which is learned from the approach of Chinese law to electronic contracts./.

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