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FILLING THE LEGAL GAP IN THE BANKING AREA IN VIETNAM BEFORE INDUSTRY 4.0 PRESSURE

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Abstract:-

Since 2016, with the appearance of products of industry 4.0 such as block chain, and products of the block chain associated with banking business area, has created many legal issues that need to be resolved.
Block chain eliminates the third parties/intermediaries in transactions. Therefore, how should the role of financial intermediaries be redefined for the present and the future? What legal risks can happen to Vietnamese investors in the market? There is no clear explanation/statement to answer those questions.
What is the legal definition of crypto currency? What role does it play in financial transactions such as investment? Can we use crypto currency as a payment method? These issues have not been resolved in Vietnam either in theory or by noting in a legal document.
As industry 4.0 is based on a big data system, the current managements, administrations, and identifications that credit organizations are implementing have become obsolete and need an overhaul. Current Vietnamese law has not been able to solve this issue.
The above loopholes need to be reviewed and identified a solution. Also, it is necessary to study and understand other countries' law adjustments that may be applied and considered to adjust Vietnamese legal system. This article is intended to solve these problems as below.

Keywords: - *Industry 4.0, legal, banking area, filling*

1. The basic issues of industry 4.0, its group of product, and its impact on the banking sector

The technology wave 4.0 such as Big Data, Artificial Intelligence – AI, and Block chain are changing people's daily lives around the world. Vietnam is also included in that trend as each group of technology 4.0 affects all areas of Vietnamese social lives both positively and negatively. This requires consideration of the completeness of legal regulations system to regulate them.

It is true that if the Internet changes the media industry, appearance of Block chain will create a revolution in not only the banking and finance sector but also other sectors. The issue mentioned in this article will only mention the impact of Block chain on the banking sector.

The content of this article comes from Block chain's technology principles, its influence on the banking sector, and thereby sets adjusted legal issues. Blockchain is a distributed database. Computers continuously perform independent audits by verifying the received data and then matching the signature of that transaction. Therefore, advantages of using Block chain are: indestructible, unable to duplicate or intervened, absolute data protection, and smart contracts (Blockchain - trends and prospects, Information Security Journal, No 1 (045) 2018, page 39).

Hence, which products will exist and become implemented in banking activities? The following main products would be the answers:

- Crystalline product of block chain: crypto currency
- Products support banking business
- Products support internal management and system organization

Although the results and affection of digital products on the society and national economy are not yet defined, within the scope of this article, the author wants to mention the three above products as the scope of this article.

2. Crypto currency - legal nature and its issues in the process of banking business activities

- Cryptography (crypto) is a type of code that has been used for a long time. Until now, because modern cryptography has become extremely complex and attached to the internet, products related to cryptography are not simply to be used for transfer information activities but also to bring financial value. That is the premise of crypto currency.
- Crypto currency for the first time shows a process of using a code and becoming a certain product. Therefore, there is a mechanism of mining digital money that is recognized to identify the types of money. Bit coin is the best example. This is a crypto currency that was first created in 2009 and by convention, it has a maximum of 21 million bit coin. Because of the "limited" mechanism, the valuation of Bit coin when market is interested always increased in market value, while no one could determine the initial value of the crypto currency. "The value of Bit coin is determined by the number of people willing to pay to own it" (Blocchain & Bit coin, Information Security Journal, No 2 (046) 2018, page 41).
- Other similar types of crypto currency such as Ethereal (ETH), Ripple (XRP), etc. were created. The similar characteristic of this crypto currency group is the process of using crypto to a certain time and material to create a crypto currency unit. This explains why there is a "mining mechanism" to create these currencies and it is always associated with "Proof of work - Proof of stake".
- Important questions are being considered in many different countries, including Vietnam. What is the legal nature of this crypto currency? Is it an asset? What is the law or legal framework of each country related this issue? Is international law related to this issue applicable to Vietnam?

First of all, it is possible to acknowledge crypto currency as a product, with a definite value. o The existence of crypto currency as a product has no impact of people and equipment. With the history of any digital currencies, they only appear when there is an impact of people, equipment, and a certain amount of energy.

- o It requires a physical impact to create crypto currency due to the mining mechanism and the determination of the final products related to that "mining" time.
- o It is possible to assess loss or minimum cost to create a unit of any crypto currency. This is reflected in the costs associated with mining machine, electricity cost, and maintenance mechanisms to determine whether or not the existence of that digital money.

With these above signs, digital money must be a physical product, ultimately created by humans without any different comments.

Secondly, if crypto currency is considered as a physical product, does crypto currency become a commodity? The reality of the global market shows that the transfers of digital money worldwide and even in Vietnam always have multidimensional fluctuation (https://markets.businessinsider.com/cryptocurrencies, https://thitruongcoin.vn). Although there is still a discussion of legal compliance when dealing with crypto currencies in each country, it is undeniable that these products have been exchanged and purchased.

Thirdly, if crypto currency is identified as a commodity, will it be considered as an asset as well? Whether a certain commodity is an asset depends on whether the state law of each countries considers it as an asset, and what kind of asset it is.

In Canada, digital money is mentioned in "Bill C-31- Economic Action Plan 2014 Act, No. 1."

In Japan, Article 2, Clause 5 of the Law on virtual currency and the Law on digital payment instruments consider digital currency as a type of valuable financial asset (Virtual Currency Act; Act on Financial Transactions of Japan, Article 2, Section 5). In addition, Japan also recognizes Bitcoin as a legal digital currency to be used in Japan https://www.ccn.com/japan-accepts-bitcoin-as-legal-payment-method-whats-next).

In Singapore, digital currency has been considered and discussed for a long time but is mentioned as a special commodity when the income arises from a transaction, the receiving digital currency party is responsible for paying the tax on the gain in value after identifying that the digital currency such as Bit coin is not a currency (Bit coin Regulation in Singapore: An Inside Look, https://bravenewcoin.com/insights/bitcoin-regulation-in-singaporean-inside-look). Regarding the definition of virtual currency, Deputy Prime Minister and Minister of the Singapore Central Bank, Mr. Thurman Shanmugaratnam stated: "A virtual currency is a representation of value that can be traded on the internet and functions as a medium of exchange" (http://www.mas.gov.sg/news-and-publications). This can indicate that, in different countries, even developed countries, general identification of digital currencies such as Bit coin, Ethereum, etc. is not affirmative or enumerating whether it is an asset or not. This shows that even though digital currency has a manifestation of assets, it is too unique, making it difficult to formally be regulated as an asset.

With the signs of asset identification, the author believes that whether digital currency is recognized as an asset depends on the laws of each country.

In Vietnam, assets are regulated in enumerated form and no regulation related to digital currency are found. Article 105 of the Civil Code 2015, which regulates assets in the enumerated form, does not include digital currency. Money under the provisions of the Civil Code must be the money issued by the State Bank of Vietnam under Article 17 of the State Bank Law 2010 or other currencies as foreign currencies as prescribed in Article 4, Clause 1 of the foreign exchange ordinance (Foreign Exchange Ordinance No. 28/2005 / PL-UBTVQH dated 13 May 2005). Digital currency is also not recognized as a valuable currency based on how valuable currencies are identified and regulated under current Vietnamese law. Although this issue can be discussed further, the State Bank Law stipulates that "Valuable currencies are payment confirmations of obligations between issuers of valuable currencies and holders of valuable currencies for a certain term, interest payment conditions and other conditions." (Clause 8 Article 6 Law on State Bank No. 46/2010 / QH12 dated June 16, 2010). This requires a clear and physical identification that digital money cannot achieve: evidence, confirmations of debt with the holder, clear confirmation that the issuer is an organization with the same binding conditions." For further clarification, Decree No. 11 / ND-CP of the Vietnamese government on secured transactions with lists of asset types issued on February 22nd, 2012 does not list digital currency as asset. "Valuable papers include stocks, bonds, bills of exchange, promissory notes, treasury certificates, deposit certificates, checks, fund certificates, and other valuable papers in accordance with the law, worth into money and allowed to trade."

Since it is difficult to formally recognize digital currency as an asset, an individual possessing one or more digital currency does not have a protection provision. In other words, owning digital currency will have many potential risks. These risks are primarily due to current laws do not recognize digital currency as the asset; which creates volatile in valuation of digital currencies. The risk also comes from the anonymity of the subject involved in digital currency transactions. These issues need to be solved in a legal way in order to reduce probability of new risks.

In order to create an end product of digital money, it is necessary to coordinate three steps: block chain, protocol (Money transfer software system), and money (O'Reilly: Blockchain: Blueprint for a new economy, Melanise Swan, ISBN 9781491920497, p.30). Thus, the loophole can completely appear when there is an incident or an impact on one of the three components that constitute the digital currency. If this happens, how are legal consequences and how should these consequences be handled appropriately? This comes from whether the protocol of digital currency can be run on a specific protocol or on a common protocol (O'Reilly, et al. p30). For example, Litecoin, a crypto currency, runs on the Litecoin protocol, but the Counterparty (XCP), a different crypto currency, runs on the Counterparty protocol, which relies on a common bitcoin block chain protocol (O'Reilly, et al. p32). However, there is a problem with the assumption that these protocols are built with the purpose of securing and managing the currencies it creates safely. If there are technical problems or impacts affecting the protocols in Vietnam territory, how deep do these issues affect? The Law on Information Technology issued on 06/2006 / QH11 stipulates that it is possible to have these problems by regulating these activities as prohibited acts (Refer Article 12 Clause 1 Information technologies Law). The legal consequence of digital currency is that its authenticity may be affected. Because current Vietnamese laws have not yet recognized digital money, these effects have not been considered. This also means that if there are any proposals for the legal recognition of the digital currencies, the risks related to the transaction process also need to be regulated and controlled.

Even though we mentioned the crypto currency is created as a product of labor and technology, do not forget that electronic money (e-money) was created and exists for a longer period of time. This is not digital money. According to the European Central Bank, "electronic money in a broad meaning and is defined as the electronic storage of a monetary value on a technical device that can be widely used to pay for individuals who are not issuers, in which do not need direct involvement of bank accounts in transactions ..." (European Central Bank, "Issue arising from the emergence of electronic money", ECB Monthly Bulletin, 11/2000). The key point of this definition is that electronic money is a form of electronic storage of a monetary value, which is not a digital currency. Thus, the transfer of money in electronic form is just a different form

of accounting entry money (to distinguish with paper money or metal money). Vietnamese law has also mentioned the concept of electronic money or transactions of money transfer electronically since 2000 (Decision 134/2000 / QD-NHNN2 18.4.2000 promulgated the technical process of electronic money transfer in the state bank system and replacement documents) as a method of money transfer and with a certain amount.

What are the specific relations between studying, evaluating and pointing out legal loopholes related to digital currency and banking activities? This can be answered in many different aspects. First of all, digital money is not an important money to be eliminated in currency transactions that traditional currencies that has been performing its inherent function. Second, does this determination relate to whether digital currency can be used as secured asset? How do we apply the control process of secured assets on digital currencies? If the law stipulates that digital money is a commodity, can it be considered a secured asset or collateral to fulfil obligations with credit organizations? How is valuation and handling of secured assets appropriate? How to apply secured asset management method? Third, if digital currency is considered as an asset, whether or not the capital contribution by assets is applicable when making capital contribution or buying shares that the related party is a credit organization? If both options are to recognize digital currency as goods and as assets, what limitations should be set when using this type of asset in banking-related transactions? That is why we mentioned the digital money in this topic scope.

3. Legal loophole in using block chain products to implement banking business activities

Banking activities include receiving deposits, granting credits, and providing non-cash payment services through accounts. In reality, new problems arise from the digital products that banking business may face. Below is some of the issues.

The appearance of smart contracts and their advantages. There are some interesting and straightforward explanations about smart contracts. O'Reilly analyses: a traditional contract is a bona fide agreement between at least two parties to do or not to do something in exchange for goods or services. Each party must trust the agreement that the other party will fulfill its obligations. Smart contracts are also the type of agreement between parties but not necessarily tied to the trust of the parties. The reason is that a smart contract that has been both verified, and executed by an automated set of code without any other option. In fact, there are three factors that differentiate smart contract from traditional contract: autonomy, self-control, and decentralization (O'Reilly, et al. p60). However, can smart contracts be used to replace traditional contracts that credit organizations currently use in doing business? Will the difficulty in impacting of smart contracts help controlling the subjects' interventions in the contracting process or contract in a way that benefits the subject whom created the contract? For example, current credit organizations primarily use contracts with pre-established and appraised terms. We do not discuss whether this contract is a template but it is not easy for credit organizations to modify the preestablished terms per client's request. Modifying content of a contract at the request of clients or even bank staffs needs to follow a similar process with the credit evaluation process. Therefore, there may have unwanted misleading in contract's terms when the authorized individuals assess and approve credits. Readers may assume that in this case the credit organizations have to check contracts closely, but it is not always possible for credit organizations to do so. In addition, in the final clause of a contract, it often has the phrase "this contract is made into ..., each party keeps ... copies, equally valid". However, the client copy and the archive copy may not be completely the same and it is impossible limit this risk completely. Therefore, these may be existing risks, often occurring for issuing credit of consumer loans.

About this issue, does smart contract solve the above weaknesses? Smart contracts can be built on the basis of code, executed automatically and cannot be stopped. In this way, a credit contract between credit organizations and customers can be built on the basis of the given conditions and cannot be affected to change each clause. In this way, foreign influences cannot affect smart contracts, but because the code is built according to common standards, credit standards are often low. A smart contract after signing cannot be destroyed or changed as adding appendixes like traditional contract. With these characteristics, the author believes it is reasonable to apply smart contracts for credit contracts for individuals with moderate credit limit level.

Where can smart contract be signed if all parties use electronic signatures and there is no term on the contract mention about the signing location? Why is it important to consider about the signing location? The determination of the location or geographic element of a contract will decide some legal action or validation of the contract such as the applicable law determination, the competent authority determination to settle disputes... Article 399 of Civil Code 2015 prescribes "the signing location is decided and agreed by all related parties; if not agreed, then the location will be the primary residence of the individual or the headquarter of the entity that initiates the offer." Thus the location must be determined but with smart contracts, this factor has not been recognized by any binding.

Regulations on network system and human resource management in the new era. Although the network system as well as human resource are often mentioned in credit organizations' internal control meetings; however, it becomes a problem when these organizations use new digital technologies to provide services. If it is possible for credit organization to evaluate the results and do business with customers through internet while being secured and verified by biological monitoring system, it will inevitably reduce the need to maintain a physical presence of the network system. Indeed, all deposit transactions, non-cash payment transactions, credit transactions, that have to be done at a physical banking location, now can be done through the digital banking system. With digital signatures, registered and authenticated, credit organization can verify and provide services to customer more quickly and conveniently. Vietnamese law has also

gradually established a legal basis for this issue. For example, the issuance of Decree 35/2007/ND-CP dated March 8, 2007 provides regulations on management, using digital signatures, and digital certificate. Also, Circular No. 28/2015 / TT-NHNN dated December 18, 2015 provides legal framework on the management, use of digital signatures, digital certificates, and digital signature certification services of the State Bank. On September 27, 2018, Vietnamese government issued Decree 130/2018/ND-CP, which provides detail regulations on implementation of the electronic transaction Law on digital signatures and digital signature authentication services. This shows that there are significant steps for Vietnamese government to regulate digital environment. Since contents of transactions using digital signatures are now identified and clearly instructed (Article 3 of Decree 130/2018/ND-CP dated September 27, 2018 stipulates in detail how to implement the Law on Electronic Transaction on digital signatures, and notary services of digital signature). Therefore, it will reduce the need to have direct transactions, or other normal activities at the branches. In addition, the combination of processing banking transactions between credit organizations and digital financial service providers (Fintech) increases the need to restructure the network system of existing credit organizations to simplify business model and focus on quality of customer services. Simplify business model and focus on the quality of customer service are necessary as they will reduce business costs while increase competitiveness.

Regulations on non-cash payment. Non-cash payment is an inherent business part in banking operations and a strong foundation to create new credit-related products and deposits between credit organizations and customers. This is probably the most impacted business part of technology 4.0. Digital payment is a concept that is frequently mentioned in discussions on how to innovate traditional banking operations. What is the main issue here? What legal loophole needs to be solved in the banking system regulation in general and in Vietnam in particular? First of all, the impact of block chain on non-cash payment is the appearance of digital currencies. In the second section of this article, we consider digital currency as a special asset. Besides, another feature of digital currency is that it can be used as a payment method.

Regulations on customer identification, prevention of money laundering, terrorist financing as well as anti-corruption. We have mentioned the issue of money laundering prevention through banking system in many different research projects, and many topics have been proposed to complete the law. (i.e: Pham Thi Giang Thu, Improvement of Law on Anti-Money Laundering through Vietnamese Commercial Banking System in Vietnam - Some Lessons from some ASEAN Countries' Anti-Money laundering Law, *IAFOR Journal of Politics, Economics & Law* (ISSN: 2188-9694), 9.2016, p137-p150). With the value of digital technology products, in addition to normal customer identification methods such as Know Your Customer (KYC), the convenience of identifying customers using digital platforms such as electronic Know Your Customer (eKYC) is becoming an effective support tool for credit organizations and customers. The recognition of the eKYC identification method has been expressed by law. Decree 101/2012/ND-CP dated November 22, 2012, on non-cash payments facilitates the provision of digital services such as mPOS, Internet banking, Mobile Banking, chip card technology, and electronic wallets, etc (Nguyen Hung, 2017). However, in order to use the above utilities, customers still have to come to a physical bank location to establish relationship with bank representatives. E.g: Circular 23/2014/TTNHNN dated August 19, 2014 guiding the opening and use of payment accounts at payment service suppliers, Circular 32/2016/TT-NHNN dated 26 December 2016 amending one number of articles of Circular 23 and Circular 19/2016 / TT-NHNN regulating bank cards. By meeting bank representative in person, it guarantees the authentication but also arises a lot of limitation of digital technology platform products such as phone applications, or even social networks. Thus, if there are plans and regulations on customer identification via full digital platform, it will facilitate more benefits and conveniences for not only customers but also credit organizations.

As analyzed above, using technology 4.0 products can bring many benefits, including undeniable conveniences, which are promptitude, and no requirement on customers' direct presence. However, it leads to risks of money laundering, corruption, and terrorist financing. So the issue here is to find solutions based on digital technologies.

The increasing appearance of entities, which is not credit organization, in banking business activities creates pressure on government to update the current law on credit organizations. For example, are the peer lending activities being considered in practice as civil transactions? Or activities of providing payment services through authorized agents like Viettel Pay are growing; Entities that are not subjected to both cases such as internet service businessman and increased products such as the provision of protocols (such as Viettel, VNPT). The issue is that the current law on credit organization Law and the actual demand of non-credit organization to participate in payment services are not compatible with each other. Article 8, Clause 2 of the Law on credit organization 2010 stipulates: It is strictly prohibited individuals and organizations, whom are not credit organization, to perform banking activities. This means that organizations, who provide banking services on digital platform, are not allowed to perform these operations. This is also one of the points that should be considered to amend and supplement on the legal provisions to suit the new situation.
Besides traditional banking business entities, the formation of service productions based on digital technology, peer to peer lending (P2P lending) is booming and there are many different legal opinions on this issue. Peer to peer lending is an activity designed and built on the basis of digital technology applications to directly connect borrowers with lenders (investors) without going through financial intermediaries like credit institutions and branches foreign bank. (According to the report of the Deputy Governor of the State Bank Nguyen Kim Anh at the meeting with Deputy Prime Minister Vuong Dinh Hue and related ministries and agencies on peer lending on March 6, 2015, there are 40 horizontal lending organizations. goods in Vietnam, http://cafef.vn/ratnhieu-cong-ty-p2p-lending-o-viet-nam-co-nguon-goc-tu-trung-quoc-singapore-va-indonesia). The supportive opinions believe that this is a civil transaction contributing to the promotion of

comprehensive finance, especially in areas where the financial system is undeveloped, and people, medium small business owners have limited access to financial-banking services at low cost, and with little procedures (The State Bank's comments on December 24, 2008 on the field of peer lending in Vietnam recently). However, opinion against peer-to-peer lending are potential risks of integrity of advertisement about profitability, not providing or providing not enough accurate information about the risks that participants may face, offering unreasonably high-interest rates to attract lenders to participate. If a dispute arises due to the failure to collect the original loans, lenders will lose money, and be difficult to claim responsibility from P2P Lending Company. In addition, P2P lending also has other potential risks such as: confidential information of participants may be stolen due to security leaks; P2P Lending Company's information storage system may be hacked or shut down by hackers, resulting in all parties' transactional information being lost or deleted. Also, some anonymous suspects may use P2P lending platforms for tax evasion, money laundering, terrorist financing; or even uses this platform as multi-level marketing to make lenders, borrowers victims of fraudulent acts by misappropriating capital illegally. Other suspects may use P2P lending platforms to lend at very high interest rates (The State Bank's comments on December 24, 2008 on the field of peer lending in Vietnam recently, et al.).

Limitations or risks arising from peer-to-peer lending cannot deny the inevitable trend of these activities when it is not altered. At that time, traditional financial intermediaries will have pressure from a new competition with digital platform providers; however, this is also an opportunity for credit organizations to use this platform to participate in peer lending (as a platform provider only) or participate as a lender. These issues are currently not regulated by law and will be a legal gap to be filled in the future. We believe that this proposal will become a reality in the short time when the State Bank's executive officers have issued the message "The State Bank is developing a pilot plan for this type of business and is expected to bring peer to peer lending as conditional business groups. Management agencies do not prohibit products of new business trends but must ensure strict management" (Some information on operating monetary policy and banking activities in the first quarter of 2019, dated April.4.2019, https://sbv.gov.vn/). It could be seen "The State Bank's comments on December 24, 2008 on the field of peer lending in Vietnam recently" (https://sbv.gov.vn)

4. Specific proposals for current Vietnamese legal system

4.1. Requirements and context set out in the completeness of the banking regulation law against 4.0 industry pressure

4.1.1 International requirements. The digital challenge that credit organizations and competent authorities are facing is increasing and it requires legislatures to study, evaluate, and provide guidance and regulations on digital technology products. At present, industry 4.0 has affected all areas of socio-economic life, including banking business.

The industrial revolution 4.0 started in 2011-2016 in pioneering countries has brought great benefits and spread rapidly across the globe. Speaker David Aikman - Representative of the World Economic Forum (WEF) in China commented: "This technology is transforming entire industries, reshaping growth targets, and competitive ability of nations. Almost every aspect of our lives will be affected: work, business model, industrial structure, social interaction, management system" (Proceedings of the Conference "High-level International Forum and Exhibition of Industry 4.0, Hanoi, 12-13.7.2018, High-level Forum Session, Main Report No. 2" Vietnam and the 4th Industrial Revolution). Vietnam is not an outsider of that impact, and the topic that is directly exploited here is the impact on banking operations and legal adjustment on banking sector.

4.1.2 Requirement to implement the goal of building e-government and applying products of industry 4.0. In order to get an overview of banking sector and banking law in the context of using more and more products created by block chain technology, the Vietnamese state governors committed to build an e-Government with a specific guidance. The banking business is always a conditional business activity not only in Vietnam but also in most countries in the world; therefore, it is necessary to have strict and practical supervision of management, adjustment to monitor any volatilities of the banking sector. This explains it is a must to build e-Government together with products of industry 4.0's products such as block chain technology to ensure implementation of below proposal. With the achieved results in the past, it can be affirmed that Vietnam is making positive steps toward digitalization of human knowledge and Vietnamese people in all fields, especially in banking sector (Central Economic Committee, Orientation to develop national industrial development policy till 2030, vision to 2045, Reference book, National Economic Publishing House, 2018, Page 105).

4.1.3 We need to maximize the use of products created by industry 4.0, especially in the banking sector, both in terms of organizational model as well as banking business. "Researching and building test zones for technology enterprises according to the advanced model of the world and implementing identification, recognition, and building a system of standards and regulations for new products, technologies and business models" is the direction for many different sectors of the economy, including the economic and banking sector. These contents need to be legislated and by specific regulations in the field of customer identification, adjusting regulations on lending conditions for customers, conditions for collateral in the process of granting loans credit, especially customers associated with innovative start-ups.

4.1.4 Solving the downside created by industry 4.0. Industry 4.0 in Vietnam is happening at a fast speed and has a strong impact on the economy. In terms of potential, this revolution offers huge opportunities for businesses and industries, including the banking sector. However, by analysing loopholes in legal system or unspecified issues arising from limitation of the banking sector, it is necessary to provide regulations and guidance to minimize negative impacts of this industry because the negative impact of banking sector will always have potential implications for society if there is no proper policy, or adequate legal system.

4.2. Regarding derivative financial products: digital currency

Originating from the objective existence of digital currency in the world, in the South East Asia region, as well as in Vietnam, the risks arise from the appearance and actual transactions of digital currency. The Vietnamese government has made quick and appropriate decisions regarding this issue. On August 21st, 2017, Vietnamese Prime Minister approved a project to complete the legal framework to manage and handle virtual assets, electronic money, and virtual currency. In addition, many research results and legal proposals have been published. (Decision 2155/QD-TTg dated August 21, 2017 of the Prime Minister approving the plan of completing the legal framework to manage and handle virtual assets, electronic money and virtual money). As an individual, the author of this article would like to propose some specific solutions associated with digital currency below:

4.2.1 Financial products derived from block chain should be evaluated and considered as a special asset. It should be recognized by revising the Civil Code 2015 (regulations on properties), or revising specialized laws (Information Technology Law).

The legal valuation of digital currency has important meaning in both theory and legal practice. In section 2 of this article, the author has identified that this is not a currency but it has enough factors to be determined as a commodity, and an asset. However, the fact is that current Vietnamese law does not have a clear opinion on determining whether digital currency is a commodity or not, and experts in this area all agree that Vietnam has not acknowledged the digital currency as an asset. Regulations and acknowledgement of digital currency as an asset are stepping stones to have a clear guidance in general management as well as monitoring activities of organizations involving in the banking sector, including business owners and beneficiary of this business model.

Even though digital currency is considered as an asset, it is a special tangible estate, as explained below:

- Environment of digital currency to exist is a digital environment, including translation and storage. Thus, it is necessary to consider the practical conditions in Vietnam with different levels of cultural qualifications and the ability to use digital tools.
- It is necessary to consider the cyberspace environment to monitor problems related to this type of property.
- It is very difficult to determine property value. It cannot be determined based on cost to create it, but based on demand of members of community, which use, transfer, and exchange that currency.
- Because subject that creates the digital currency is anonymous, it is difficult to determine the responsibility of a particular organization or individual for this type of property.

When considering digital money as a special asset, amendments or additions need to be considered for the following: Which law is suitable to add recognition of digital money as a special asset? The author believes that legislatures should amend the specialized law - Information Technology Law No. 67/2006-QH11, not the Civil Code 2015 on property issues. Chapter 2 of the current Civil Code has regulations on opening specific regulations according to specialized laws. From Article 105 to Article 117 of the Civil Code 2015 regulates and identifies assets, types of assets, but always open or apply exclusion method without providing explicit characteristics. It even only mentions but did not provide clear guidance. For example, Article 105, Clause 1, stipulates that assets are objects, money, valuable papers and property rights, but do not provide guidance on how valuable papers are determined. Also, when referring to a tangible property, Article 105 only identifies it as a not real estate. Therefore, if it is necessary to supplement regulations relating to tangible assets, it can be stipulated in specialized law, but not necessarily in the Civil Code. Article 4, Clause 2 of the Civil Code 2015 affirms: Other laws related to civil relation adjustment in specific fields must not be contrary to the basic principles of civil law stipulated in Article 3 of this Code. This analysis leads to the next question: where in the current Law on Information Technology is appropriate to add supplement. In order to ensure consistency, it is necessary to add definitions of digital currency as a supplement on Chapter 2 of the Information Technology law, Section of digital money regulations and requirements related to the ownership as well as other arising legal issues.

With the above analysis, we believe that, if digital currencies are to be issued (ICO), this must be a highrisk debt security.

4.2.2 With the assumption that Vietnam recognizes digital money as a special asset, it is necessary to immediately stipulate ownership requirements for this type of asset such transfer condition, transaction, and monitoring mechanism. Associated with the content of banking operations, a regular transaction is identified with a person owning assets, which is using the property to ensure the obligation performance with the credit organization. However, with the characteristics of digital currency, the author proposes not to allow to use this type of asset to secure the customer's obligations when establishing relations with the credit organization, even though it is a large credit organization. The fact shows that the price and price evaluation of digital currency such as Bitcoin, even with the high circulation and popularity in the international market (including the Vietnam market), has no definite basis. It means that risk level is high (even the case of handling secured assets). Besides, if it is allowed to use this type of asset to guarantee customer credit obligations, it will be a risk of exchanging digital currency to get "real money." For example, customers want to get loans from a credit organization and use Bitcoin as collateral. It is assumed that this option is implemented and real money has been given to borrowers. When the term expires and the customer fails to pay the debt, the credit organization will sell Bitcoin to recover the debt. However, there is no section in current law or regulation define this situation. If there are no regulations to monitor potential risk, plus the pressure of safety business for personal loans, it is not safe to allow credit organizations to accept digital currency as security asset.

In addition to the issue related to identification as a special asset class, when taking measures related to the use of digital currency to secure the obligation for the credit relationship, the factor determining the value of assets in the secured transaction relationship also needs special attention. Assuming that accepting digital currencies can be used in secured transactions according to the functional approach theory, the problem of collateral value also has a great risk factor. Functional approach theory was initiated in the United States, with the basic content: all transactions are established on the basis of agreement, regardless of the form, name of the transaction, as long as the right or security interest of the secured party on the assets of the secured party on the basis of an agreement between the two parties, in order to perform the function of securing the performance of obligations, known as a secured transaction. (Grant Gilmore, SECURITY INTERESTS IN PERSONAL PROPERTY, Vol. I, §8.1, Little, Brown & Co. (1965).) This theory leads to a guarantee by the receiver when an agreement has been established, regardless of form. However, when the value of the collateral falls below the allowable level, the interests of the secured party cannot be completed. This creates the need to change the collateral for the secured obligation that faces many obstacles. Bit coin's price volatility over the past few years proves the point (CoinMarketCap, 2021, May 31st).

Additional points worth noting for crypto currencies: in Vietnam, at present, Article 8, Decree 21/2021/ND-CP dated March 19, 2021 on elaborating to the Civil Code regarding security for fulfilment of obligations has no identity regulations the asset is a digital currency, which means it cannot be used for secured transactions.

4.3. Proposals on improving the law for banking business activities

4.3.1 Considering in expanding eligible organizations participating in banking activities to allow non-credit organizations to do fintech activities (for example, permit non-credit organizations to provide payment products such as Viettel pay). Take Viettel as an example, it is understood that Viettel pay is operated as bank authorized agency. However, Circular 39/2014/TT-NHNN does not clearly provides requirements for organizations to provide payment services as authorized agency. Therefore, it is necessary to provide regulations, guidance for organizations to implementing the above activities because it will facilitate and reduce the cost for not only banks to establish relationship with new clients but also customers themselves. The proposal of approving authorized agency activities should only be applicable to authorized agency whom is organization, but not individual. Also, non-credit organization who is authorized as an agency must have information connection with credit organization by default.

In addition to the above proposal, it is also necessary to consider a formal recognition of entities that provide financial services on a digital platform (Fintech). Adjusting peer-to-peer lending and online payment services based on Fintech technology is also necessary to consider. To eliminate negative effect of peer lending or payment risks, and create a fair competition between different entities that provide a same type of service, it is a need to adjust current law model, operation conditions, operation contents, and restrictions.

4.3.2 Legal recognition on forms of contract, including smart contracts. If the Civil Code only generally states that "a contract is an agreement between parties to establish, change, or terminate civil rights and obligations", specialized legal documents in banking sector can explain more in detail what a contract is (Article 385 Civil Code 2015). Currently, the State Bank regularly re-assesses the appropriateness of legal documents and is responsible to issue Circulars and guidance on how to form a contract between credit organizations and customers.

Besides the provisions of specialized legal documents, it is also necessary to specify the regulations on dispute settlement of smart contracts. As we mentioned, not only flexible in location and timeframe to sign a smart contract but also ensures high accuracy and trustworthy. However, when there is a dispute arises, the determination of re-settlement authority is often based on the location where the contract is signed. Therefore, it is necessary to have clear guidance on the provisions of Article 40 of the Civil Procedure Code 2015 to ensure a legal basis of benefits that a smart contract brings.

4.3.3. Legal recognition on requirements of network organization for types of credit organizations, including technical infrastructure conditions and its technology basis, human capability of taking position in normal conditions, and digital application conditions assessed as capital conditions, bad debt rates. This condition is also consistent with Vietnam's goal towards a digital economy in the near future. This proposal will create pressure on existing credit organizations, and future organizations to control operating costs. Thus, it is necessary to have a plan and strategy to create timeline with the specific goals and requirements at each step, as well as issue regulations on risk management in accordance with the Basel standards.

Not only providing regulations related to network operation of the credit organization, but it also needs to determine requirements for issuing credit to ensure flexibility, simplicity, and absolute accuracy. This is based on an assumption that information relating to credit issuing conditions such as customer credit status, security asset status, accuracy of records used as security asset, etc. are shared between organizations or entities on a feepaying basis. If these proposals are approved in the direction of recognizing block chain products as special assets, it will cause a necessity in amending some of current regulations, and government documents. For example, government documents on the

security transaction, the State Bank's guidance on network organization, or Law on notary public will need to be amended.

4.3.3 Recognizing the diversification of customer identification methods (KYC), including traditional, biometric technology, and digital methods. This is quite urgent because Vietnamese government is determined to launch "digital banking" by providing digital transactions while customers still have to provide credit organizations physical identification cards such as "ID card, Citizenship card, etc. for individuals, or Document of Formation, or Business Registration Certificate, etc. for organizations". (Circular 49/2018 / TTNHNN dated December 31, 2018 on limited-term deposits. At the time of the author's writing of this project).

Currently, Tienphong Commercial Joint Stock Bank has digital applications and is permitted by the State Bank to use fingerprint, and face recognition technologies (Pham Thi Giang Thu, 2018), but it is still on trial and for this commercial bank only. The biometric identification (face recognition) has also been applied by many countries around the world before Vietnam, but there is no information or confirmation applying this application in the banking sector. For example, this application is used as security control at Singapore's custom gate or identification of terrorist suspect used by Russian security agency. In addition to the advantages of using EKYC, it is also necessary to consider the limitations of using tools indirectly through EKYC simultaneously with other digital products, such as using electronic interfaces, electronic wallets. The plan stipulates that an electronic wallet needs to have 2 layers of security (one layer to access the wallet, one layer when making payments and transferring money such as payment by Mobil banking is also an option to consider). Identification of customers according to Article 14a Circular 16/2020/TT-NHNN dated December 04, 2020 provides amendments to the Circular No. 23/2014/TT-NHNN dated August 19, 2014 of the Governor of the State Bank of Vietnam providing guidelines for opening and use of checking accounts at payment service providers has provided specific instructions on Online opening of a personal checking account, however, there are still many items that need further consideration and adjustment related to securities and user data privacy **(**Digital transformation of the banking industry towards a sustainable strategy in the 4.0 era, https://sbv.gov.vn)

In addition, another important method with high accuracy is Distributed Ledger Technology (Scientific Workshop on "Legal Corridor for Digital Banks in Vietnam", page 68, State Bank, Hanoi, 2017). Distributed Ledger Technology is a technology that helps building a distributed data system for all banks and sharing customer identification information effectively and securely. The system allows an one-time identification procedure, then creates unique customer files on the system where all banks have access. All documents provided by customers and customer history of compliance behaviours are also stored on the system. However, in order to obtain and apply this application, it is necessary to have a strategy and timeline for trial and general implementation. It is not only about applicability, but also consideration of the relevant legal system, especially the principle of data sharing, as well as the protection of customer's confidential information.

Conclusions: with the inevitable trend of the appearance of products of industry 4.0, the legal system of Vietnam should have appropriate records and adjustments. The goals of this recognition and adjustment are to enjoy the benefits of new technologies, while also minimizing the negative side of these products

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