

FROM E-BANKING OPERATIONS TO DIGITAL BANKING OPERATIONS IN VIETNAM: LAW CURRENT SITUATION AND RECOMMENDATIONS

DAS OPERAÇÕES BANCÁRIAS ELETRÔNICAS ÀS OPERAÇÕES BANCÁRIAS DIGITAIS NO VIETNÃ: SITUAÇÃO ATUAL DA LEI E RECOMENDAÇÕES*

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Abstract: Under the impacts of the Fourth Industrial Revolution, banking is a business field in which a new business model related to the financial technology and digital banking technology based on big data platforms, artificial intelligence, Robotic Process Automation and Blockchain Technology. In Vietnam, the legal framework for digital banking operations has already had initial regulations in the Law on Credit Institutions and the Law on Electronic Transactions. However, these regulations have not met the requirements to regulate the digital banking operations, because these are electronic banks - the first stage of digital banking operations. In the strategic orientation of the banking industry development, the digital banking development is one of the identified goals, in which, building a legal framework for digital banking operations is a solution that needs to be implemented immediately. To develop digital banking operations, current regulations on e-banking operations must be amended and supplemented to meet the requirements of digital banking operations, especially standards on technology infrastructure, the requirements for safety, continuity of transactions and protection of customer interests.

Keywords: Digital banking. Law on Credit Institutions. State Bank of Vietnam. Credit institutions.

Resumo: Sob os impactos da Quarta Revolução Industrial, o setor bancário é um campo de negócios no qual um novo modelo de negócios relacionado à tecnologia financeira e à tecnologia bancária digital baseado em plataformas de big data, inteligência artificial, automação de processos robóticos e tecnologia Blockchain. No Vietnã, o arcabouço legal para operações bancárias digitais já contava com regulamentações iniciais na Lei de Instituições de Crédito e na Lei de Transações Eletrônicas. No entanto, essas regulamentações não atenderam aos requisitos para regular as operações bancárias digitais, por se tratar de bancos eletrônicos - a primeira etapa das operações bancárias digitais. Na orientação estratégica do desenvolvimento do setor bancário, o desenvolvimento da banca digital é um dos objetivos identificados, em que a construção de um enquadramento legal para as operações de banca digital é uma solução que necessita de ser implementada de imediato. Para desenvolver operações bancárias digitais, os regulamentos atuais sobre operações bancárias eletrônicas devem ser alterados e complementados para atender aos requisitos das operações bancárias digitais, especialmente os padrões de infraestrutura tecnológica, os requisitos de segurança, continuidade das transações e proteção dos interesses dos clientes.

Palavras-chave: Banco digital. Lei das Instituições de Crédito. Banco do Estado do Vietnã. Instituições de crédito.

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1. Introduction

Digital transformation is an irreversible trend with the main content being the shifting from the traditional way of living and working with entities to the way of living and working with both entities and their connected digital versions in the digital space (Ho, 2020). As a business in the digital economy, banking operations are also in the process of strong digital transformation in order to both adapt to the process of digitizing the economy and improve the quality of banking services through integrating traditional banking operations into technology platforms to provide for customers, ensuring the continuity in all banking operations from conducting the transaction, connection...to customer consultation as well as increasing the service quality and ensuring safety in providing the digital banking services. In terms of form, like other business, digital banking operations also take place on the Internet, and the application software helps customers and banks to interact and perform banking operations. There are two digital transformation trends in the banking industry: developing an independent digital bank, and connecting, sharing data through the open banking initiative (Iran, 2020). Each digital transformation trend in banking operations has its own advantages and disadvantages. Therefore, the choice of digital transformation method in banking operations depends on the level of digital development in banking operations, the management capacity of the state as well as customer's service acceptance.

Ensuring the safety and continuity in providing the digital banking services is the most important requirement. This is reflected in the ability to respond effectively and promptly to situations that interrupt or hinder the supply and use of digital banking services, especially in the context that innovative models such as social media, mobile, big data, cloud computing, Internet of things, artificial intelligence, blockchain, virtual reality...are growing. It can be affirmed that digital banking will bring credit institutions many opportunities to offer new valuable incentives, especially the combination of existing services of commercial banks with new digital achievements (Naimi-Sadigh, Asgari, & Rabiei, 2021). However, no matter how much digital technology develops, there are still potential risks that are reflected in the technology “holes”. If not proactively taking countermeasures, the bank will fall into a passive position and will not well protect the customers' interests. In the coming years, when the wave of cloud-based digital-mobile banking transformation is through the strategic partnerships, joint ventures, mergers and acquisitions between fin-tech companies or with large technology companies..., credit institutions have not only opened up opportunities to create value and synergy to increase competitiveness, but also hidden the risk of market sharing, and revenue reduction, especially in the payment department or money transfer – one of the leading targets of financial technology

innovations with the motto of taking customers as the center of payment services. Therefore, the financial and technological network security in providing the payment services will become a secret, a significant priority because credit institutions, when providing digital banking services, must be based on the digital standard platforms (Luigi, Jeo and Michael, 2020). In other words, the factor of information security, ensuring the confidentiality of customer information as well as transactions will directly affect the “the feeling of easy-to-use” and “the feeling of risk”, thereby determining the customer's choice to use digital banking services. To do this, credit institutions must build a strict and confidential customer information management system. Factors of confusion in transactions, the low confidentiality in perception, and the high perceived potential risks from customers can negatively affect customers' attitudes towards banking services, thereby leading to a decrease or change in customers' intention to use digital banking services (Nguyen, N.D, Nguyen, D.V, Nguyen, D.D., 2020). The promulgation of the technical, data and safety standards in the use of Application Programming Interface to facilitate the release of the open banking industry, the pioneer is the British Open Banking Standard (Tran, 2020), that is good experience in legislation to ensure safety in digital banking operations.

To regulate digital banking operations, many countries have built an open legal corridor to promote competition, innovation, and encourage the virtual banking licensing. Virtual banking is a banking model that operates with no physical branches, connects with customers only through mobile applications and digital channels such as European Law on electronic Identification, Authentication and Trust Services, Law on Electronic Signatures in Global and National Commerce of the United States, Hong Kong's Electronic Transactions Ordinance... These laws govern the use of electronic records and signatures in transactions, including regulations relating to standards for signatures, certificates, electronic seals, and other authentication mechanisms to ensure that electronic transactions have the same legal value as paper transactions (Tran, 2020).

In Vietnam, the legal framework for digital banking operations has already had initial regulations in the Law on Credit Institutions and the Law on Electronic Transactions. However, these regulations have not met the requirements to regulate the digital banking operations, because these are electronic banks - the first stage of digital banking operations. In the strategic orientation of the banking industry development, the digital banking development is one of the identified goals, in which, building a legal framework for digital banking operations is a solution that needs to be implemented immediately. At the same time, the digital transformation policy in the financial - banking sector is one of the priority sectors according to Decision No. 749/QĐ-TTg dated June 3, 2020 of the Prime Minister approving the “National Digital Transformation

Program to 2025, with orientation to 2030” with the content of digital transformation in commercial banks to provide digital banking services in the direction of diversified development of distribution channels, innovation , process automation, promote cooperation with financial technology companies and payment intermediaries in building a banking and financial service ecosystem to promote national financial popularization, bring financial - banking services closer to those in remote areas who have not been able to access or have not been served by banks based on technological innovations such as mobile payment, peer-to-peer lending, and facilitate loan accessibility with credit scoring solutions with the trusted customer databases and scoring models. In the future, legislators need to continue their efforts in amending and supplementing current regulations to meet Vietnam banking system's need to transform from electronic banking to digital banking.

2. Research method

Legal research can be divided into normative legal analysis and empirical legal research. A normative juridical study of law as a norm that uses a positivist logical concept and is identical with written norms by trying to find whether the law is suitable to be applied to solve a particular problem. The source of research data is the material law where the legal material is taken, in order to help the formation of law. Data Collection Method is documentation with primary data material obtained from applicable legislation and adjusted to the subject matter being studied. The Secondary Law material is obtained by carrying out an inventory of literature books, documents, articles. In presenting data, this research will be presented in the form of a description compiled systematically following the systematic flow of the discussion. Methods of Data Analysis conducted with legal material obtained and then analyzed qualitatively, namely, analysis conducted by understanding and compiling data that has been obtained and compiled systematically, then drawn conclusions.

The article is made based on a descriptive qualitative analysis method based on the main data sources, those are publications and archives, which focus on political orientations, policies, the national digital transformation strategy, and the banking industry development strategy to 2025, a vision to 2030. To clarify the points in the article, the authors also use a systematization method, a comparative method to clarify how to establish a legal framework for digital operations in some countries as the basis for analysis and evaluation in requirements for amending and supplementing regulations on e-banking operations in line with digital banking operations and Vietnam's development practices.

3. Research results and discussion

3.1. The relationship between the Fourth Industrial Revolution, the digital economy, and the transformation of e-banking to digital banking

How do the Fourth Industrial Revolution and digital economy affect the transformation from e-banking to digital banking? The relationship between the fourth industrial revolution and the digital economy to digital banking is shown in the following aspects:

First of all, the fourth industrial revolution has a strong impact on all aspects of economic and social life, including banking operations - an important economic sector of each country. Practices have proven that no one denies the effects of the fourth industrial revolution not only for the Government and businesses but also for the entire socio-economic life. The Fourth Industrial Revolution has been changing socio-economic activities, opening opportunities, but also posing many challenges to economies in all countries around the world. Actively exploiting the benefits of new technologies, promoting economic development and improving competitiveness, cutting costs and improving productivity; business models with very small marginal costs, creating network effects; opportunities to develop new products and services; ...all above for better things or the acceptance to go later is the decisive choice of each country to take advantage and participate effectively in the development trend of the Fourth Industrial Revolution. The fourth industrial revolution is beyond the limits of human control. It is continuous and has almost no end. The fourth industrial revolution helps to shorten the gap between researchers, innovators, and the market. Artificial intelligence plays an increasingly active role in integrating the technical factors with the professional factors in different fields, thereby helping to improve the quality of life with the help of robots and automated technology as well as connect life through the Internet (Min, Jeanne & Suk, 2018). People, through social media platforms, can easily connect, find out information to serve their needs. For businessman, the fourth industrial revolution creates favorable conditions for quick access to digital platforms in research, development, marketing, distribution, and sales, thus helping to improve quality, price and distribution of their products and services. Consumers are also more involved in production and distribution chains by connecting with manufacturers and suppliers of goods and services based on digital platforms (Petre, 2016). If the speed of technology development played a key role in previous industrial revolutions, technology development in the fourth industrial revolution is expected to increase exponentially in speed, the technological technique as well as socio-economic impacts (Rabeh, Husam, and Saeed, 2017). These are the

characteristics of the fourth industrial revolution. In that context, Vietnam determines that proactively and actively participating in the Fourth Industrial Revolution is an indispensable and objective requirement; is a task of particularly important strategic significance. It has been both urgent and long-term of both the political system and the whole society, closely associated with the process of current extensive international integration (Politburo, Resolution No. 52-NQ/TW dated September 27, 2019). Accordingly, the banking operations of credit institutions are also affected by the development of the fourth industrial revolution. Banking business is a business field in which a new business model related to financial technology and digital banking technology has emerged.

Secondly, the digital economy is the actual manifestation of the impact and influence of the fourth industrial revolution on economic activities, thus helping to lead and develop digital technology in each part of the market economy. Digital economy is an economic model that uses digital technology and data to create new business models (Pham, 2019) that are essentially the integration of digital technologies into all areas of an enterprise from the operating methods, business models to offering new value to the customers of that enterprise and accelerating business activities. Digital technology promotes many businesses to improve development models, create many new industries and remove geographical borders. It can also appear at anytime and anywhere in social life, such as e-commerce sites, online advertising or applications for food, transportation, delivery, ... to meet the convenient needs of customers (Nguyen, 2020). The effectiveness of the digital economy is demonstrated by attracting new customers, preventing the informal economy, and helping to eliminate corruption. Digital economy is based on modern digital infrastructure and digital production systems by using technology to ensure the product quality, competitiveness, the supply capacity, and efficiency in industries. The creation of data centers helps to provide the easy, stable, secure, and cost-savings data storage services and the processing services for governments, businesses, and citizens (Mahmudov, Mullabayev, 2020). Nguyen (2021) describes the process of developing the digital economy, from the Digital Economy - ICT (Information & Communication Technology) based on the information technology industry and telecommunications services to the Internet Digital Economy which is expressed in economic activities based entirely on the Internet, and the Digital Economy In Industry/Field or Sectoral Digital Economy includes economic activities based on digital transformation of industries and fields, application of digital technologies and digital platforms to traditional industries and fields in order to increase labor productivity, optimize operations, create new economic values, and new business models, including activities

such as: e-governance, e-commerce, digital finance, digital banking, smart agriculture, smart manufacturing, smart tourism, etc.

Thirdly, digital banking is the result of digital transformation in the economy. Digital banking is not only a manifestation of the digitization of the economic sector, but also has the effect of supporting and promoting other economic sectors. This is reflected in the fact that the digital economy has a positive impact on the complete transformation to (electronic) cashless payments, remote access and other electronic forms of finance and banking operations, thereby ensuring the integration of the electronic payment system with the world payment system (Mahmudov, Mullabayev, 2020).

If e-banking operations are the e-banking service system (including services such as Internet Banking, SMS Banking, Mobile Banking), is created to supplement services on traditional banking platforms, digital banking is a type of digital banking with full functions of a bank, from the organizational structure to the working processes, products and services, documents, and transaction methods with customers (including digital in and digital out). Digital Banking is a high demand on technology including innovation in financial services for customers around strategies on digital application, artificial intelligence application, payment, RegTech, big data, blockchain technology, API, distribution channel and technology. The development of digital banking helps banks save costs, increase competitiveness, improve compliance and transparency in business activities. For customers, digital banking helps customers use banking services conveniently and securely with maximum utility, save costs and improve financial efficiency, support online business development (Pham, Nguyen, To, 2020). Thus, digital banking is the digitization of traditional banking services, allows bank's customers to access the banking products and use banking services through online platforms to replace physical presence of the bank, remove the customers' need to visit a branch (Haralayya, 2021), thereby helping to reduce the transaction processing costs, improve payment efficiency, financial services and improve bank-customer relationship.

3.2. Laws for e-banking operations: the priority safety criteria based on the licensing procedure

3.2.1. Legislative process for e-banking operations

E-banking operations were formed after the Law on Electronic Transactions 2005 had been promulgated because there was no regulation on electronic banking operations in the Law on Credit Institutions 1997, revised 2004. In 2007, the Government issued Decree 35/2007/ND-CP dated March 8, 2007 on electronic transactions in banking operations, on electronic transactions in banking operations related to conditions for agencies, organizations

and individuals participating in electronic transactions in banking operations,, organizations providing e-signature authentication services in banking operations and the use of electronic signatures; electronic documents in banking operations, settlement of disputes, complaints and denunciations, inspection, checking and handling of violations. These regulations have created a legal framework for e-banking operations in Viet Nam. During this period, e-banking operations - an additional service that “enriches” and differentiates the provision of banking services based on Internet Banking, SMS Banking.

To create a legal framework for e-banking operations, the Law on Credit Institutions 2010 has officially regulated e-banking operations. During the establishment stage, the assurance of having an information technology system that meets the requirements of management and the operating scale (Point d, Clause 2, Article 26 of the Law on Credit Institutions 2010) is one of the conditions for a credit institution to open and operate. In the provision of e-banking services, if a credit institution fails to implement or inadequately implements the handling decision of the State Bank to ensure safety in banking operations (Point đ, Clause 1, Article 28 of the Law on Credit Institutions 2010), the license for the establishment and operation of the bank will be revoked. The Law on Credit Institutions 2010 stipulates that the State Bank has the authority to guide e-banking operations on risk management (Article 97 of the Law on Credit Institutions 2010), requirements to ensure safety and security in e-banking operations (Article 133 of the Law on Credit Institutions 2010). In addition to the guidance of the State Bank, when performing e-banking operations, credit institutions must also comply with the law on electronic transactions such as ensuring the confidentiality of information related to their accounts, deposits, deposited assets and customers' transactions at credit institutions, foreign bank branches (Clause 2, Article 14 of the Law on Credit Institutions 2010); build the backup database to ensure safe and continuous operation (Clause 1, Article 15 of the Law on Credit Institutions 2010)...

3.2.2. Contents of e-banking operations in Viet Nam: Strongly developing the service of receiving deposits and providing payment services through accounts

The contents of e-banking operations in Viet Nam are being strongly deployed in receiving deposits and providing payment services. Detail:

Firstly, for receiving electronic money, Circular No. 48/2018/TT-NHNN dated December 31, 2018, of the State Bank of Vietnam stipulating the savings deposits, allowing credit institutions to receive deposits by electronic means. Accordingly, the credit institution shall guide the procedures for receiving and paying the savings deposits by electronic means through the depositor's current account at the credit institution in accordance with this Circular,

regulations of the law on electronic transactions, on prevention and combating money laundering and relevant regulations of law to ensure the accurate receipt and payment of savings deposits, the asset safety for depositors, and operational safety for credit institutions. To meet depositors' requirements in tracing, checking, and settling disputes, credit institutions must ensure to keep adequate information related to receiving and paying the savings deposits by electronic means.

Secondly, in the provision of payment services through accounts, current Vietnamese law has detailed regulations on payment via bank accounts by electronic means, including bank card operations,** the provision and use of checks,†† the provision of payment services and the payment intermediary services‡‡. In general, the law on providing the payment services, especially card payment in Vietnam, stipulates the payment forms related to e-banking operations such as automatic teller machines, card acceptance device at the point of sale, card payment via Quick Response Code based on security forms such as card holder identification number, card-issuer code. The card payment operation mechanism is demonstrated through a fact that the card issuer, the card payment organization, the card acceptance organization, the card switching organization, the electronic clearing organizations for card transactions, and international payment organizations...all are responsible for keeping information on card, cardholders and card transactions confidential and only providing information at the request of the cardholder, a competent state agency or as prescribed by law. The sharing of information related to card activities shall be agreed upon by the card issuer and payment organization in accordance with law. The international card organization is responsible for providing information related to card

** See specifically:

- Circular No. 19/2016/TT-NHNN dated June 30, 2016 of the Governor of the State Bank of Vietnam stipulating the bank card operations.
- Circular No. 30/2016/TT-NHNN dated October 14, 2016, of the Governor of the State Bank of Vietnam amending and supplementing several Circulars on the payment services and the payment intermediary services.
- Circular No. 26/2017/TT-NHNN dated December 29, 2017 of the Governor of the State Bank of Vietnam amending and supplementing a number of articles of Circular No. 19/2016/TT-NHNN dated June 30, 2016 of the Governor of the State Bank of Vietnam stipulating bank card operations.
- Circular No. 41/2018/TT-NHNN dated December 28, 2018 of the Governor of the State Bank of Vietnam amending and supplementing a number of articles of Circular No.19/2016/TT-NHNN dated June 30, 2016 of the Governor of the State Bank of Vietnam stipulating bank card operations.
- Circular No. 28/2019/TT-NHNN dated December 25, 2019 of the Governor of the State Bank of Vietnam amending and supplementing a number of articles of Circular No.19/2016/TT-NHNN dated June 30, 2016 of the Governor of the State Bank of Vietnam stipulating bank card operations.

†† Circular No. 22/2015/TT-NHNN dated November 20, 2015, of the Governor of the State Bank on supply and use of checks.

‡‡ See more:

- Circular No. 39/2014/TT-NHNN dated December 11, 2014, of the Governor of the State Bank guiding the payment intermediary services.
- Circular No. 30/2016/TT-NHNN dated October 14, 2016, of the Governor of the State Bank of Vietnam amending and supplementing several Circulars on the provision of payment services and payment intermediary services.

transactions with BIN issued by the international card organization at the request of the State Bank to perform the state management function.

Thirdly, the safety and security for the provision of banking services on the Internet is a matter of concern to Vietnamese legislators. The content of regulations on safety and security for the provision of banking services on the Internet is specified in the Circular No. 35/2016/TT-NHNN dated December 29, 2016, of the Governor of the State Bank of Vietnam on the safety and confidentiality for the provision of banking services on the Internet and this Circular has been amended and supplemented by Circular No. 35/2018/TT-NHNN dated December 24, 2018, amending, and supplementing a number of articles of Circular No. 35/2016/TT-NHNN dated December 29, 2016, of the Governor of the State Bank of Vietnam on the safety and confidentiality for the provision of banking services on the Internet.

Internet banking services include banking services and payment intermediary services provided by units through the Internet based on the Internet Banking system - a structured set of hardware equipment, software, databases, the communication network and confidential security system for the production, transmission, collection, processing, storage and exchange of digital information in management and provision of Internet Banking services, the Internet Banking transactions authentication, the operation management, the customers' interests protection.

Fourthly, one of the disadvantages of Vietnam's legal framework on e-banking operations is that there are many regulations to regulate big data and AI, which will make it difficult for digital transformation in the economic fields. For example, in Viet Nam, digital banking seems to be focusing on developing the payment services through customers' accounts. Other banking operations, such as the credit granting based on the digital credit score, have the prospect of greater efficiency and the potential to promote integration, but concerns about discrimination and threats to borrower privacy (Nicolas, 2021) is still a major barrier for applying this technology in the practices.

3.2.3. E-banking Operations Management

The current legal framework has created a legal corridor for electronic payments, card payments, licensing and supervision of non-banking organizations providing payment services. However, these regulations tend to control e-banking operations with the complicated and time-consuming licensing procedures. Credit institutions can try to develop their products in a short time, but the licensing procedures take up to three months to bring the product to market. In addition, there is no regulation on standards for QR codes; the use of digital signatures still has many shortcomings and inconveniences when digital signatures require a dedicated storage

device, and this can cause many inconveniences for customers. Moreover, the absence of an e-KYC system for user authentication while the Government and the State Bank have not yet allowed banks to access the Citizen Identification Data system, so credit institutions can only rely on the customer-provided code (Nguyen, Nguyen, Mai, Tran, 2020). This not only hinders the digital transformation in banking operations but can also lead to fraud through the acquisition of unused accounts of students or the low-income person, which has just been discovered. The requirements for e-banking management and digital transformation in banking operations are not only the process of restructuring the banking industry associated with transforming the growth model in depth on the basis of science and technology, innovation and achievements of the Fourth Industrial Revolution (National Assembly, Resolution No. 124/2020/QH14 dated November 11, 2020), but also contribute to realizing the goal of modernizing the banking industry to meet the goals based on technology, advanced banking management in line with operational standards in accordance with international practices, towards the development level of the group of 4 leading countries in the ASEAN region by 2025...by rationally expanding the traditional channel network in combination with promoting strongly the development of modern banking transaction channels (E-banking, mobile banking, internet banking...) through applying the technical advances (Prime Minister, Decision No. 986/QD-TTg dated August 8, 2018).

3.3. Towards the legal framework for digital banking operations in Vietnam

The analysis of the legal framework on e-banking operations in Viet Nam shows that the current law does not use the term “digital banking” but rather “e-banking”. This also means that the current legal framework only covers the partial digital transformation, i.e. digitizing some processes, distribution channels or products and services based on experiments, experience initiatives, and implementing through the motto “just do it, learn from it”, but have moved to the stage of digital banking operations, that is to build a separate digital business segment for the bank. In other words, digital banking operations become a highlight and the competitive advantage for the bank, so it is unified, consensus and there is close coordination between departments in the bank. The current legal framework for e-banking operations does not meet the highest level of digital transformation in banking operations. It is the digitization of all banking operations in the automatic, direct way for customers through electronic means and the interactive communication channels (Miguel, 2020) through applying technology to process all banking transactions from start to finish to ensure maximum convenience for customers in terms of availability, usefulness, and fees. For banks, providing a full range of digital banking services helps to reduce operating costs, avoid errors, and improve the quality of banking

services (Stanley, 2015). This requires that the legal framework regulating the digital banking operations needs to be further improved to both meet the digital transformation requirements of credit institutions, meet the needs of the market, and meet the requirements of banking market management in the digitalization period in the global environment. From the trend of digital banking development in Vietnam as well as the international experience, we believe that the legal framework for digital banking operations should be improved towards:

Firstly, to develop standards and conditions for providing the digital banking services in the Law on Credit Institutions as a basis for establishing models and conditions for the provision and use of digital banking services.

Being different from E-banking operations (an additional service “enriches” and differentiates in the provision of banking services based on Internet Banking and SMS Banking); Digital banking is a constitutive element of traditional banking operations by integrating into technology platforms. Therefore, digital banking can be considered a form of modern bank, which includes all aspects of an ordinary bank such as organizational structure, the human resources management, operations, and services. Digital banking is also a branchless or automated bank based on a technology-based platform to exchange information as well as perform transactions and services between the bank and the customer (Nguyen, Dang, 2018). The outstanding feature of digital banking compared to traditional banks and e-banking is the technology-based operating model in the Internet environment to exchange information and perform transactions between banks and customers. Since the Internet is the environment for providing and using the digital banking services, it is necessary to ensure the smooth operation of the digital banking system, especially responding to incidents that “break” or disrupt digital banking transactions is the first and most important requirement that determines the feasibility and the sustainable development of the digital banking system. The practices of providing digital banking services mainly takes place on the Internet, so credit institutions are susceptible to systematic influences (both their own and those of Internet banking infrastructure providers), are at risk of legal violations and the reputation risks due to technical errors arising in the process of providing and using the banking services. Therefore, only qualified credit institutions can provide digital banking services, which is a major legislative trend chosen by countries to avoid systemic risks and at the same time it is possible to effectively control the act of taking advantage of technology holes to promptly prevent acts of attacking the digital banking system at the national level as well as each credit institution. From the above analysis, in our opinion, the Law on Credit Institutions needs to add a separate chapter to regulate the digital banking.

The content of regulations regulating digital banking operations should focus on the following contents:

- Establish principles of applying the Law on Credit Institutions and the Law on Electronic Transactions in providing the digital banking services. Accordingly, digital banking operations shall comply with the regulations of the Law on Credit Institutions, and the Law on Electronic Transactions shall be applied only when the Law on Credit Institutions does not have such regulations.

- Supplement the concept of digital banking based on the concept of banking operations. Accordingly, digital banking is the performance of one or several banking operations based on technology under the guidance of the State Bank of Vietnam, in which the banking transactions between credit institutions and customers take place in the Internet environment.

- Standards and conditions for providing the digital banking services include: 1. Must be a credit institution established under Vietnamese law; 2. Having an Internet banking infrastructure system that meets the requirements of the State Bank; 3. Having a team of personnel to run the digital banking system; 4. There is a technical system to guide and support customers to perform the digital banking transactions; 5. Having a commitment to ensure transaction safety and confidentiality of customer information; 6. Ensuring the effective and timely response to digital banking disruptions.

- Adding regulations on transactions, the digital banking documents, especially the customer information storage system, so that credit institutions can easily check and compare customer information to avoid risks to customers as well as the system of credit institutions.

- Regulating the cases in which customer information is shared between credit institutions. Accordingly, when providing the digital banking services, credit institutions must announce to customers about regulations on management and sharing of customer data. Credit institutions may only share information with customers' consent. All information sharing between credit institutions to check and compare customer information, especially credit granting operations must be kept confidential and not affect the use of digital banking services by customers.

- Legalizing the regulations on investment in infrastructure, the strong development of electronic payment methods such as online banking, payment via Internet, mobile phone, contactless payment and the contactless payment acceptance, mobile contactless payment, payment via QR Code, Tokenization,...; applying new, advanced security measures and security standards in line with the payment trend in the world; ensuring the fast payment with the

security, safety, convenience and reasonable cost as mentioned in the Strategy on Development of the Banking Industry in Vietnam to 2025, with a vision to 2030.

Secondly, protecting the interests of customers using digital banking services is an important factor to protect the reliability due to the rapid development of technology applications.

Protecting customers' interests is the center and the most important issue in banking development. The practices of running the digital banking show that, for customers, concerns about the safety of transactions and the risk of personal data intrusion (Phophalia, S. 2019) are the main obstacles to customers' decision to use digital banking services. Therefore, the commitment to protect customers against technical problems in using digital banking by meeting the requirements of confidentiality and safety of transaction information will determine the approach and use of the digital banking service. There are two measures to protect the interests of customers, namely: the preventive measures (through regulations on measures and methods to protect customers) in the law on digital banking, and protection of users of digital banking services through the resolution of problems or disputes that arise is called repressive protection (Herdian, Darminto, 2019). In the Russian Federation, the quality of protection of customer confidentiality is constantly improved through the customer data storage in the servers of commercial banks to facilitate the better implementation of all necessary function of providing digital banking services (Etembekov, 2021).

The requirements set forth in protecting the interests of customers using digital banking services are not only based on the legal foundation but also must be based on ethical standards in providing the digital banking services such as assessing the creditworthiness of customers, collection and use of customer data in relation to the protection of privacy and customer confidentiality in using digital banking services. Because the interaction between banks and customers in providing and using digital banking services is the cause of holes in the banking security system, leading to the digital banking cyber security attacks that harm the interests of customers. A transparent, fair, safe, and secure digital banking system that avoids the predictable or random risks and harms during operation are the standards for assessing the level of customer benefit protection. In other words, customer protection in the provision and use of digital banking services is an actual manifestation of the equal relationship between credit institutions and customers, is a factor that ensures the establishment of a solid, efficient, and strong banking system, contributing to the creation of a stable financial system, promoting the national economic growth (Syarifah, Faradila, 2020). To protect customers well in providing and

using digital banking services, according to us, when providing the digital banking services, credit institutions need:

- Publicly announcing the policy to protect customers' interests, especially in the case the customer encounters a transaction error, the stolen information, lost money, or technical obstacles leading to failure to achieve the goal as desired.

- Effectively supporting customers through troubleshooting instructions, effective hotlines, and a quick, accurate customer information feedback mechanism; avoiding shifting the responsibility between business departments.

- Actively coordinating with customers as well as with competent state agencies in handling the law violations.

- Adding regulations on the responsibility to protect customers of credit institutions in providing the digital banking services in the Law on Credit Institutions as a basis for establishing the authority and legal tools so that the State Bank provide guidance and have timely support measures to protect customers.

Thirdly, to enhance the role of the Central Bank in ensuring the safety of digital banking operations. Experiences in developing digital banks in other countries shows that the central bank plays an important role in promoting the digitization of banking operations. The Central Bank of the Russian Federation establishes a list of systemically important credit institutions or other credit institutions that have a consolidated license to perform banking operations that meet the requirements to join an external payment system providing the operating services, the clearing and settlement services when transferring money by express payment services (Khomenko, 2021). In addition, the central bank of the Russian Federation also allows commercial banks to set up laboratories to create new technologies, organize digital banking festivals where people can present start-up ideas in the field of digital banking (Etembekov, 2021). According to the Central Bank of Malaysia, the transformation of the country's financial system to the adoption of a digital banking infrastructure could promote the country to become a high-income economy. The establishment of Malaysia's first digital bank enables innovative application of banking technology to address the market gaps in unprovided and unserved segments (Tiong, 2020).

In Vietnam, a deep awareness of the applying the modern science, technology, and innovation, along with the development of high-quality human resources...are the key components for rapid and sustainable development, improving competitiveness and shortening the development gap of Vietnam's banking industry compared to the region and the world, are one of the viewpoints in the Strategy for Banking Industry Development of in Vietnam to 2025,

with an orientation to 2030. In addition, the State Bank has also been proactive in the administrative reform to create favorable conditions for credit institutions to develop digital banking services. In the current conditions, the State Bank needs to focus on measures:

- Researching and promulgating a Circular on digital banking technology standards for credit institutions or technology enterprises to proactively establish. This is a must-do, because, without regulations on digital banking technology standards, it will be difficult to assess the quality of digital banking services in relation to international digital banking standards.

- Supplementing regulations on the technology safety supervision in the Law on State Bank of Vietnam to create a legal basis for the State Bank to carry out supervision activities to give early warnings about digital banking technology risks so that credit institutions can take appropriate response measures.

4. Conclusion

It can be affirmed that Vietnam has been proactively and actively participating in the fourth industrial revolution through the successful construction of a digital government, digital economy, and digital society. This has been shown in the National Digital Transformation Program to 2025, with a vision to 2030, which sets out the goals of developing the Digital Government, improving the operational efficiency and effectiveness; developing the digital economy, improving the competitiveness of the economy and developing the digital society, narrowing the digital gap through the fundamental tasks and solutions for digital transformation, which are the awareness transformation, the institutional construction, digital infrastructure development, digital platforms development, building of trust, assurance of network safety and security (Prime Minister, Decision No. 2289/QĐ-TTg dated December 31, 2020). For banking operations, digital transformation has been strongly implemented in the field of providing payment services and has been gradually moving to other banking operations. The current Law on Credit Institutions only regulates e-banking operations, without regulations on digital banking. Therefore, it can be affirmed that the current regulations are only suitable for the stage of partial digital transformation. For a comprehensive digital banking transformation and the digital banking operations in the right nature, in line with the trend of digital banking development, it is necessary to amend and supplement the Law on Credit Institutions, which

clarifies the content, scope, safety standards, response to systemic risks due to disruption of digital banking operations, the security of customer information as well as the safety supervision of digital banking technology. In addition, the State Bank of Vietnam needs to further promote the role of orientation and establish a legal framework for banking operations in line with the current trend of digital economy development in Vietnam.

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