Digital transformation of Vietnamese commercial banks

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Abstract:

Through the collection of secondary data, the article researches the basic issues related to digital banking, and technology application trends in the world banking industry and explores the current state of technology application in Vietnamese banks. Research results show that many countries around the world have promoted modern applications to banking activities with customer-centric criteria. Vietnam's banking industry is in the early stages of digitization, banks are starting to apply digital technology to their operations and provide customers with services such as voice authentication, innovative digital banking, automatic transaction branches, counter channel digitization, electronic identification (eKYC), multi-channel banking, digital banking from e-wallets. The technology application index (ITC index) showed that the level of information technology application in the operations of banks is very different, some banks are ready to invest but some banks have not invested much in changing technology. Then, the article offers solutions for the digitization process of Vietnamese banks.

Keywords: Digital technology, digital banking, opportunities, challenges, 4.0 technology, commercial banking.

1. Introduction

The commercial bank is one of the most important institutions in a country's financial system. In essence, the bank's products are products and services. The banking products provided to customers are not perceived through the senses, the supply and consumption take place at the same time, and the quality of the product depends a lot on the mode of supply, time, and location.

The way the product is provided is one of the factors that make up the success of the bank, helping the bank to increase its competitiveness. To promote better and more efficient product delivery, banks have increased the application of information technology. One of the immediate benefits is the speed of adoption of digital technologies, which has attracted a lot of users and the level of attraction has increased markedly in recent times, especially in the context of countries facing the Covid_19 epidemic, direct trading conditions are limited. It is for these reasons that more and more banks are interested in technological transformation. Two areas that banks are particularly interested in at the moment are payment and consulting. This leaves banks facing greater competition from other intermediaries, especially financial technology (Fintech) companies.

In 2020, although many industries and fields are affected by the COVID-19 epidemic, banks or financial companies still have positive business results, even in some technology-related industries such as commerce. Electronic or digital banking can also find development opportunities even during the epidemic season. Data from the Payment Department under the SBV shows that in the first 6 months of 2020, there were 200 million payment transactions via the Internet with a value of about VND 12.9 million billion, up 36% over the same period in 2019 (Hai Yen, 2021). However, the application of digital technology to the bank's business activities only stops at using core banking, the application of modern technology is at an early stage. Statistics on the level of readiness to apply information technology in the Vietnamese banking system show that the results are not positive. In addition to the indicator that 100% of commercial banks have implemented the Core banking system, other indicators reflecting the ability to apply IT such as risk management only reached 59.4%, or only 43.8% of banks achieved certificates of credit. For information security, the implementation of the CRM (Customer Relationship Management) system only reached 53.1%, while ERP (Enterprise Resource Planning) only reached 50%. The basic services of internet banking such as online savings deposit, bill payment, or SMS banking, many Vietnamese commercial banks have not yet performed. This shows that the level of IT application in the Vietnamese banking system is still limited (Le Duy Khanh, 2019). So, the Vietnamese banking industry is in the early stages of digital transformation, and the digitization of services still has many issues that need attention. The article is designed to understand the trend of technology application in the world banking industry, and the current state of technology application in operations, thereby proposing solutions for the digitalization strategy for Vietnamese banks.

2. Literature Review

2.1. Digital Banking

Digital banking is a common trend in the development of the banking industry. This is a type of bank that uses information technology to provide a variety of value-added products and services to customers (Githuku, 2018). Digital banking is the use of electronic means to provide banking services, primarily through the Internet and mobile phones (Okiro, 2013). This is a type of bank that uses the internet, mobile phones, and other electronic means as a distribution channel for banking services such as balance inquiry, statement printing, money transfer to other accounts, and new banking services such as presentation and electronic bill payment without the need for face-to-face transactions (Singh, 2017). A digital bank is a type of bank that leverages technology to provide banking products to improve the accessibility and affordability of customers for the services provided. This banking model ensures maximum convenience for customers in terms of availability, usefulness, and cost, and it also improves all traditional banking operations and organizations (Stanley, 2017).

Thus, digital banking has many different interpretations, but in general, it is the application of modern information technology to provide products to customers, enabling customers to perform transactions remotely. In addition, digital banks also focus on many other issues such as organizational models, governance, customer service goals, methods of redesigning products and services, safety and security, and human resources in a digitalized environment.

According to Raskin (2016), the rapid development of digital banking services has made life much easier and more convenient to conduct transactions. The operation of a digital bank has the following characteristics:

- Uniform integration of distribution channels: digital banking helps diversify channels for customers to easily access banking services. Customers can use preferred channels to transact with the bank. Between channels, there must be adequate information relay connection, ensuring a stable customer experience. Customer requests starting from one channel may be processed and ending in another. Customers who request to open an account on the website, when they come to the counter, only need to sign the application and authenticate, without having to provide the information again. There is a connection and connection between the counter channel and digital channels.

- Automating processes: doing business on digital channels requires fast and automated back-end processing. Towards automation in many areas including customer interaction, operations, risk management, and decision making.

- Innovation: the bank must create innovative and convenient new products for customers. Commonly applied technologies such as Bigdata, artificial intelligence, Blockchain, Robotics, Internet of things...

- Big data analytics for decision making to exploit data inside the bank and outside the bank for business. Banks can analyze information on users' mobile, social networks, and telecommunications networks to score credit and make lending decisions. Banks can use customer behavior analysis, find the right customers to send appropriate promotional messages, and increase the chances of cross-selling services...

To assess the level of technology application in banking operations, the Vietnam ICT index can be used (Ministry of Information and Communications, 2006). This method is calculated based on the guidelines of the United Nations organization. Regarding the calculation method, the ITC index applies the standardized method based on Z-Score when calculating the component indexes, and uses an independent evaluator of online public services to be consistent with the calculation method of the United Nations e-Government Report. Regarding the indicator system, the ICT Index includes 3 main groups of indicators: technical infrastructure, human infrastructure, and IT application.

2.2. Benefits of applying technology in banking activities

Applying modern technology to banking operations brings many conveniences to customers and banks. Digital banking helps customers shorten transaction time, get more information, increase reliability through data security methods, customers can track transaction information. For banks, this type of bank also brings a lot of benefits as follows:

- Digital technology helps banks reduce bookkeeping and manual operations. In particular, digital technology will help banks reduce "downtime" in the process of serving customers. The promotion of digital technology applications helps the bank to increase revenue, and increase business efficiency with low cost of service provision.

- Digital technology allows banks to create or modify business processes. Most banks today are organized according to the model of many departments and divisions. Accordingly, although each department assumes different roles and responsibilities, to ensure optimal efficiency, coordination between the parties is required, but the application of the traditional method of coordination always reveals certain limitations, reducing work efficiency. Therefore, the deployment of technology software or banking management software will help the activities in departments and divisions take place scientifically, quickly helping managers to grasp all information about the operation situation, work efficiency, and the development of the bank.

- Digital banking also allows banks to attract high-quality human resources. Applying technology to improving operations will help banks become dynamic and creative employers, gradually removing the notion that banking is a profession associated with boring books and paperwork. Modern technologies can help banks automate many stages from human resource planning, creating job proposals, and posting on recruitment websites, to collecting applications automatically from news sites. recruiting, interviewing, and issuing job offers. Besides, technology also helps banks to store employee information clearly, screen and arrange it scientifically, suitable for each title and scope of work.

- Increasing the use of technology in the process of providing products to customers also helps promote customer participation in the service delivery process, helping the bank improve service quality, perceived value, usability is more perceived and customers are aware of the risks involved, increasing customer satisfaction, responding to the increasingly changing requirements of customers and markets, thereby helping the bank grow its customer base.

Digital banking also helps banks reach customers and small businesses in remote areas in a convenient way with the most reasonable cost. The high cost to open transaction offices in remote areas can lead to unfeasible business expansion, modern applications of digital banking will help banks solve this problem.

2.3. Risks in the application of technology in banking activities

Besides the benefits, the bank's operations also face increased risks, of which the two most important risks are the change of business model and the risk of network security.

- Risks of changing business models and governance models. The uneven application of technology among banks will lead to disparities in governance efficiency and business performance. This affects the competitiveness of banks.

- Risks of security and high-tech crime. The modern development of digital technology has led to an increase in security holes, creating conditions for high-tech criminals to attack.

3. Current status of technology application in the operation of Vietnam's commercial banking system

Vietnam's commercial banking system is in the early stages of digitization. As of December 2020, about 95% of banks have been developing or planning to develop a digital transformation strategy, and 39% of banks have approved a digital transformation strategy or integrated it into the development strategy of the information technology business. About 42% of banks are building a digital transformation strategy, and 88% choose to gradually digitize customer communication channels and internal operations. 19% plan to establish a new brand, and only 6% of banks only digitize customer communication channels (Tu Anh, 2020). Currently, banks are starting to apply digital technology to their operations and provide customers with services such as voice authentication, innovative digital banking, automated transaction branches, counter channel digitization, electronic identity (eKYC), multi-channel banking, and digital banking from e-wallets.

In December 2020, the State Bank of Vietnam issued Circular No. 16/2020/TT-NHNN, which added regulations on opening personal payment accounts by electronic method (eKYC). Thereby, eKYC was officially applied from March 5, 2021, with a maximum transaction limit of 100 million VND/month. As of December 2020, many banks have implemented eKYC to open online accounts such as VPBank, TPBank, VIB, Sacombank, Vietcombank, etc. According to HDBank's report, this bank has 15,000 accounts that have implemented online information authentication, and the transaction rate increased by 25% compared to the months before eKYC implementation.

The development of banking applications on the Omni-Channel (multi-channel) platform helps customers control and perform financial transactions most effectively, and at the same time, it also helps customers to perform transactions at different locations, continue at another, and finish at another. This will help customers to comfortably transact in whichever channel is most convenient for them. Currently, some banks have launched applications on the Omni platform: OCB Omni (OCB), SeAMobile (SeABank), VCB Digibank (Vietcombank), etc. Unify mobile and web channels with many new features such as personal financial health care, bill reminder, etc.

Applying Big Data to banks helps to collect information about customers, predict future behaviors and make real-time decisions based on real-time data. Recently, International Bank (VIB) officially announced to be the first bank to successfully apply Big Data & AI to bring a completely online credit card opening experience with a shortened card approval time. continent, less than 30 minutes.

Besides, some banks are ahead of technology trends by establishing the first foundations for the Open API platform, which is a platform for sharing data and building an ecosystem of products and services. Some banks have been ahead of this trend such as Vietinbank (the first bank in Vietnam to test the Open API platform on the iConnect platform since 2018), and OCB (Open API Challenge event to increase cooperation opportunities).

Although the application of information technology to the operation of commercial banks is only at the beginning, there is a huge difference between banks. Based on the ICT index, the commercial banks that have the strongest application of information technology in their operations include BIDV, NamA bank, TCB, Tien Phong Bank, MBB, Baoviet bank, and ABB. Which, BIDV and NamA bank are the two strongest banks in the digital technology application system. The three banks that have lower and slower digital adoption levels than the rest are VPSB, OCB, and GPbank.

To promote digital technology into operation, the technical infrastructure is one of the very important factors. However, the technical conditions of banks today are very different. According to the technical infrastructure index ranking information, Tien Phong bank is the bank with the highest technical infrastructure index, and OCB and Saigonbank are the two banks with the next ranked infrastructure index. Meanwhile, many banks have very low technical infrastructure indexes such as GPbank, EIB, and Agribank. From these indicators, it is possible to identify banks that are and are ready for digital transformation.

Human resource is also one of the cornerstones of successful digitization. But in Vietnam, the human resource infrastructure index of banks is generally very low, and the scores of this indicator in banks are generally not much different except for Nam A Bank (Ministry of Information and Communications, 2019).

The Bank's Internal Application Index is the third index of the ITC index, which has a large variation among banks. Tien Phong Bank, Saigonbank, and OCB are the three banks with the lowest internal application index, showing that the application of technology to internal management is not much, mainly done by manual method. Meanwhile, GPbank, Oceanbank, and Baovietbank have this index very high, showing that internal management processes handled by technology have been promoted.

As for the technology application of services provided to customers, the data shows that there is a disparity between banks. Which, TCB, Tien Phong bank, VTB, Vietcombank, VPbank, and BIDV are the strongest application banks. Banks such as GPbank, NCB, NamAbank, and Banviet bank have very low applications.

Although the application of information technology of some banks is higher than that of others, most of these banks only stop at a few basic products such as payment, deposit mobilization, and a part of the loan. During the COVID-19 pandemic, these products were further promoted, making retail banking activities appear quite obvious development trends, banks focused on developing the retail segment based on digital technology application platforms, focusing on meeting the needs and experiences of customers in the direction of enhancing personalization and diversifying customer choices.

4. Opportunities and challenges in applying digital technology to banking operations

4.1. Opportunity

The great advancement in technology has given banks more opportunities to apply modern technology. Especially, since Vietnam's banking industry is in the early stages of digitization, the opportunity to catch up with modern technologies will be better.

The number of people who still do not have access to banking services in Vietnam is still quite large. Many people in rural areas do not have the opportunity to access electronic payment services and do not have a bank account. Most modern means of payment are concentrated in big cities. Therefore, these are potential customers of digital banks.

With about 130 million mobile phone subscribers nationwide, more than 50% of people use the internet, along with the strong development of the model of convenience stores, supermarkets are growing rapidly and gradually occupying market share. Increasingly, replacing the traditional form of shopping is also an opportunity for banks to go deeper into the digitalization process.

The Covid 19 pandemic has had a strong impact on the economic activities of countries in a negative direction, but for some banking activities, this is an opportunity for development. The prolongation of the pandemic has also drastically changed consumer psychology and behavior. Consumers tend to promote the use of digital technology compared to the past because of the benefits that this technology brings. Besides, for the views against electronic interaction, the global COVID-19 pandemic has created an opportunity to change the views of this group of people to accept the use of digital banking applications as a new normal habit.

4.2. Challenge

When customers have started using digital banking services, banks will face more challenges in providing services. The increasing penetration of the internet and the availability of a variety of services on mobile phones will change the way customers want to use banking services with more and more conveniences. Digital channel customers demand a superior experience through immediate, consistent, and consistent demand response, and one-stop transaction requirements will also increase. These problems will pose more difficult problems for banks to solve, not only applying technology but also the banking management process must be improved to increase competitiveness.

Digital transformation requires banks to cooperate with technology companies such as Fintech, and Bigtech to attract new customers, change experiences, enhance customer journeys, better services, and automate. better, optimize resources and operating costs. As such, the bank will face profit sharing and customer base with these companies.

Customer needs coupled with technological applications have created new business models. Both traditional banks and new banks are embarking on a transformation journey to be able to provide a comprehensive digital experience, becoming an exchange with a wide range of services and products, providing solutions. business, not just banking services. This requires the bank to change its management thinking and gain more experience in business activities.

Changing customer behavior, emerging technology, and changing business models are raising issues related to legal regulations on electronic transactions, electronic signatures, electronic contracts, issues of identity and authentication, and mechanisms and regulations on data sharing.

Infrastructure also requires synchronous and centralized digital infrastructure, connection technical standards, data standards, shared databases, and security and privacy infrastructure. The increasing trend of high-tech crime with many new and increasingly sophisticated tricks makes digital banking more difficult.

Besides, human resource is also one of the challenges of banks undergoing digital transformation. This field is still quite new in the Vietnam market, human resources related to technology, and digitization… are not many but it is easy to change jobs, banks not only compete with each other in terms of personnel but are also competed by fintech companies. These companies are willing to pay higher wages to attract employees when the market demand is high and current human resources cannot meet. Therefore, human resources are mainly recruited from traditional banks with banking and finance expertise or from technology companies.

The level of diversification of services in the banking industry is inherently not high, mainly focusing on providing traditional banking services such as capital mobilization, lending, and payment. Some new services with many utilities are still difficult to deploy due to many reasons such as limitations in technical infrastructure, user awareness, financial capacity of commercial banks, and unsatisfactory human resources.

5. Recommendations for the Vietnamese commercial banking system

5.1. Recommendations for regulators

In the Industrial Revolution 4.0 era, Vietnam also made certain preparations, specifically Directive No. 01/CT-TTg on promoting the development of Vietnamese digital technology enterprises which was issued by the Government. However, for the successful application of technology to the operations of banks, the support of regulatory agencies is required. As follows:

- For the Government: create favorable conditions for the banking industry in promoting the application of technology into operations. As banks simultaneously promote digital banking, the data volume of the industry will be huge, requiring banks to improve data storage. Meanwhile, banks can only improve technology, in terms of bandwidth infrastructure, it is beyond the reach of banks in particular and the banking industry in general. Therefore, it is necessary to have the direction and solutions of the Government for this problem.

- For the Ministry of Information and Communications: before Directive No. 01/CT-TTg on promoting the development of digital technology enterprises in Vietnam, all businesses in the economy will move towards digital transformation. This trend leads to huge amounts of data in the economy that need to be stored. Therefore, the Ministry of Information and Communications needs to have a plan to implement synchronously with businesses, focusing on broadband infrastructure solutions.

- For the State Bank: To promote the application of technology in banking activities, the State Bank has issued an Action Plan to implement Directive No. 01/CT-TTg on promoting the development of Vietnamese digital technology enterprises. The objective of the Plan is to create a favorable legal environment, perfect the policy framework to promote digital transformation in the banking industry, promote research and application of technology, and develop a variety of products and services. digital banking. For the implementation to be effective, it is necessary to develop a clear roadmap for the banks to implement and guide the implementation according to the actual situation in Vietnam. In addition, in the coming time, banks need to focus on supporting the development and implementation of information work. This is an important foundation for the development of digital technology.

5.2. Solutions for commercial banks

For commercial banks, to achieve efficiency in the digitalization process, it is necessary to focus on two issues including digitalization strategy and human resource development. Thus, each bank needs to build a digitalization strategy, taking the customer as the center. To do this, the commercial banking system needs to:

- Diversify distribution channels to help customers easily access the bank's services. Implement counter channels to promote self-service habits and bring modern transaction space to customers. Enhance connectivity between channels, ensuring a uniform experience (Omni-channel). Allow customers to choose the right product on their favorite channel. Be cautious when developing traditional channels.

- Automate the transaction process to shorten decision-making time and save costs. Build new automated processes. Digitize existing processes, and automate new product deployments. Step by step applies automated processes with customers, internal, risk management, and operations.

- Enhance innovation. Applying modern technologies for digitization and product creation such as blockchain, AI, the internet of things, etc. Prioritize competitive innovative products in the market. Translating traditional products to digital channels. Develop products suitable for customer segments.

- Focus on data analysis. Researching big data analysis tool solutions, and forming a business analysis department. Build data analysis models for marketing and business.

- In the context of a significant increase in fraud in electronic transactions. Banks need to manage the risks of account theft, transaction fraud, and cybercrime by updating adequate security and network levels, implementing hardware security, and offering solutions. related to password regulation and user privilege management. To be effective for this group of solutions, the cooperation or support of Fintech companies is required.

Besides, to succeed in the digitalization process, human resources are an important factor that banks need to pay attention to. Therefore, banks need to study the business model, organizational structure, and labor structure in line with the roadmap and orientation to deploy digital banking. Modern life has changed the mindset of workers, salary is no longer a top concern. The factor of employees' attachment to the bank is to properly appreciate the importance of building corporate culture as well as have a long-term human resource development plan, and offer reasonable remuneration policies to retain employees. talented people instead of just focusing on input recruitment as at present●

REFERENCES

Githuku, G. W., & Njuguna, R. K. (2018). Effects Of Online Interactivity On Customer Relationship In The Banking Industry In Kenya. *International Journal of Sales, Retailing & Marketing,* 7(1).

Hai Yen. (2021). *Digital banks enter the 'race' to gain market share. Vietnam News Agency.* https://baotintuc.vn/thi-truong-tai-chinh/ngan-hang-so-vao-cuoc-dua-gianh-thi-phan-20210310155519991.htm, accessed on 23/3/2021

Le Duy Khanh. (2019). Information technology application in Vietnamese commercial banks. *Banking Magazine,* http://tapchinganhang.com.vn/ung-dung-cong-nghe-thong-tin-trong-ngan-hang-thuong-mai-viet-nam.htm, accessed on 22/03/ 2021.

Ministry of Information and Communications. (2019). *Vietnam Information and Communication Technology Development and Application Readiness Index report 2019.*

Okiro, K., & Ndungu, J. (2013). The impact of mobile and internet banking on performance of financial institutions in Kenya. *European Scientific Journal,* 9(13).

Pshenichnikov, V.V. 2018. Influence of Financial Technologies on Changing the Model of Customer Banking Services. *Theory and Practice of Service: Economics, Social sphere, Technology,* 1(35), 48-52.

Raskin, M., & Yermack, D. (2016). *Digital currencies, decentralized ledgers, and the future of central banking* (No. w22238). National Bureau of Economic Research.

Schwab, K. (2016). *The Fourth Industrial Revolution: what it means, how to respond.* Available: World Economic Forum https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-itmeans-and-how-to-respond/. Accessed 11 June 2019

Singh, S. (2017). *Factors affecting consumer adoption of internet banking in India: an empirical study* (Doctoral dissertation, Aligarh Muslim University).

Stanley Fuller, D., Buote, R., &, K. (2017). A glossary for big data in population and public health: Discussion and commentary on terminology and research methods. *Journal of Epidemiol Community Health,* 71(11), 1113-1117.

UBS. (2018). *The evolution of artificial intelligence*. Available: https://www.ubs.com/microsites/artificial-intelligence/en/new-dawn.html. Accessed 12 June 2019