

# DIGITAL TRANSFORMATION TRENDS IN THE BANKING INDUSTRY IN SOME INTERNATIONAL COUNTRIES AND DIGITAL TRANSFORMATION IMPLEMENTATION STRATEGIES IN VIETNAM

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**Abstract:** *In the digital age, the digital transformation of the banking industry has become an inevitable trend in the world. The financial sector is undergoing a strong transformation with digital technology to reshape financial products and services such as payments, loans, insurance, and asset management. In the world in general and in Vietnam in particular, given the sharp development of information technology and the high proportion of participation in the finance and technology companies sector, digital transformation is a must for banks. Especially, it is the rapid changes in customer needs and pressure from decreasing operating costs and increasing business efficiency that give banks no choice but to transform digitally. This article concentrates on the digital transformation activities of Vietnamese commercial banks, and some digital transformation methods of banks in the US, Singapore, China, and Japan are analyzed. Then, it proposes some strategies for Vietnamese commercial banks in the process of implementing efficient digital transformation strategies.*

**Keywords:** *digital transformation, financial sector, strategies, technology.*

## I. Introduction

The age of the 4.0 industry has been making a breakthrough, boosting the supply of banking products and services, creating the base for the formation and development of digital banks. Digital banks require high technology, which includes innovation in financial services, digital, mobile strategy, AI, payment, RegTech (which means managing legal processes via technology), data, Blockchain technology, application programming interface (API), distribution channels, and technology.

Many researches on digital transformation have become available: Hakkarainen (2022), a member of the Supervisory Board of the ECB, at the Institute for Financial Integrity and Sustainability wrote *The digital transformation of the European banking sector: the supervisor's perspective*, *Harvard Business Review* (2020) *Which Economies Showed the Most Digital Progress in 2020*, Kiyotaka Sasaki (2022) *Financial Digitalization and Regulatory Challenges for Japan, The Future of Financial Systems in the Digital*

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Age, Monetary Authority of Singapore (2020) *Digital Infrastructure to Enable More Effective Financial Planning by Singaporeans*. In Vietnam, some researches on digital transformation have been done including Le (2021), “Chuyển đổi số và những vấn đề đặt ra trong phát triển dịch vụ tài chính - ngân hàng ở Việt Nam”, *Tạp chí Tài chính*, số kỳ 2/2021, 13; Pham and Tran (2019), “Phát triển ngân hàng số - kinh nghiệm quốc tế và giải pháp cho các ngân hàng thương mại Việt Nam”, *Tạp chí Tài chính doanh nghiệp*, số 11/2019; Phan and Nguyen (2021), “Cơ hội và thách thức trong chuyển đổi số đối với ngân hàng Việt Nam”, *Tạp chí Thị trường Tài chính Tiền tệ*, số 12/2021. Accordingly, the research on “Digital transformation trends in the banking industry in some international countries and digital transformation implementation strategies in Vietnam” is likely to make contribution to the knowledge about digital transformation trends in the banking industry in the world in general and in Vietnam in particular with the given of the experiences of digital transformation process in banking sector of the USA, Singapore, China and Japan and the appliance of Vietnamese Government in the setting of local banking industry.

## II. Literature review

At the moment, in the field of finance and banking, the trend of digital transformation is taking place more and more clearly. Especially in developed economies with modern technology platforms, remarkable developments in digital transformation activities have been seen in the banking sector. In Vietnam, the digital transformation process of commercial banks is also on the move quickly and has initially retrieved considerable results. However, for the digital transformation of Vietnamese commercial banks to have smoother and effective results, it is vital to learn from the experiences of banks in developed

countries whose economies are strong in the world.

So far, digital transformation has been regarded as a complicated issue, which is carried out within a framework such as value creation, structural change, technology utility, and financial areas. Digital transformation can be defined as technological factors as well as changes in organizational and operational strategy. Digital transformation is seen as a promoting factor and provides some solutions to the challenges that banks are coping with in the digital age. (Matt et al., 2015).

Schwertner (2017) said that digital transformation is the application of technology in which new business models, processes, software and systems are built, creating more revenue, competitive advantages and higher effectiveness. To achieve this, it is necessary for businesses to transform processes and business models, empower the workforce effectively; innovate, improve the personalization of experiences by customers and citizens.

According to Lê (2021), digital transformation is defined as the process of changing from a traditional business model to a digital business by applying new technologies like Big Data, Internet of Things (IOT), cloud computing... to make a change of operating, leading, working processes and company culture.

In short, digital transformation of the banking industry means a change in digital technology, digitizing all areas and operations of the bank, in which allows for the creation or modification of operating processes, business models, culture and rises in customers' experiences, catching up with changing market requirements and satisfying the increasing needs of customers.

## III. Research method

The research method used in this article is secondary research. The author collected data from articles

and related studies in Vietnamese and English published in Vietnamese and foreign scientific journals in the area of finance and banking sectors. As a result, the research will make clear the digital transformation activities and challenges of Vietnamese commercial

banks, and the precious experiences of digital transformation methods of banks in the US, Singapore, China, and Japan are analyzed. Then, some solutions to Vietnamese commercial banks are proposed in the process of implementing efficient digital transformation strategies.

#### IV. Findings and discussion

##### 4.1. Current digital transformation situation with some challenges of Vietnamese commercial banks in the banking industry



Figure 1. Evolutionary trend of the banking system

(Source: Dr. Cấn Văn Lực and group of experts - Digital transformation in banking in Vietnam: Opportunities, current status and solutions)

Vietnam is seen as a potential country with a young and dynamic population structure. With the current technology 4.0, the use of smartphones is a prerequisite to making a contribution to the digital transformation of Vietnamese commercial banks. The latest data from the United Nations reported that Vietnam's population is more than 98 million people with an average age of 33.3 years old until March 24<sup>th</sup>, 2022. Especially during this period of time, Vietnam had 93.5 million subscribers using smartphones, with an estimated proportion of adults who used smartphones being about 73.5% (reported by Vietnam News Agency, 2022). According to the statistics from the annual report "Digital 2021", there are about 70 million Internet users in Vietnam, making up 70.3% of the total population (Nguyễn, 2021).

In recent years, there have been many positive and considerable changes in the Vietnamese banking system in the process of the digital transformation strategy. However, in general, although

the digital transformation activities of Vietnamese banks are merely active in the early period, there are a lot of efforts of the banks and the cooperation of management and direction of the Government and the State Bank of Vietnam (SBV), basically, the Vietnamese banking system has initially gained positive and significant results. According to statistics from the State Bank of Vietnam, by September 2020, a digital transformation strategy was being carried out or planned by 95% of commercial banks in Vietnam, of which 39% of commercial banks approved a digital transformation strategy to develop their business along with information technology and 42% of commercial banks were setting up a digital transformation strategy (Phan & Nguyễn, 2021).

In the process of digital transformation, each bank will have a different level of digital transformation depending on its scale, financial capacity and resources. In general, a majority of Vietnamese commercial banks have also

launched digital banking applications for customers' usage on smartphones and computers such as VCB Digi bank, VietinBank iPay, BIDV Smart Banking, VPBank Online, eBank X of TPBank, Ebanking of HDBank and so on.

However, there are still many difficulties in the process of implementing the digital transformation strategy of the Vietnamese banking system, as follows:

First and foremost, despite the fourth industrial revolution's powerful impact, there are still a number of legal obstacles in the process of advancing digital banking and growing the banking industry, including technological issues that require rules and guidance for implementation; electronic invoices, electronic signatures, electronic documents, and so on.

Second, there are still many difficulties in synchronizing and standardizing technical infrastructure that will enable the banking sector to connect and integrate seamlessly with other sectors and domains to create a digital ecosystem and provide consumers multi-utility services.

Third, some concerns like safety and information security are brought up by financial technology businesses' (Fintech) collaboration with banks. The tendency of rising high-tech crimes is to use a variety of new and increasingly complex techniques. In particular, the dangers of exposure to SMS OTP, risks from family members, fraudulent accounts, and the purchase and sale of phony ID cards in order to open accounts. Money is swiftly transferred through fictitious accounts when customers are conned. This makes it impossible to identify the individual who completed the transaction, which makes it challenging to look into and get clients their money back.

In order to address this issue, numerous banks have incorporated new

technologies into their payment processes. For instance, National Australia Bank, Commonwealth Bank of Australia, Westpac Banking Corp, ICICI Bank, and Lloyds Bank have implemented Near Field Communications (NFC) technology on phones in place of bank cards or Barclays, Lloyds Bank, Halifax, and HSBC have used contactless card to help shorten transaction times.

Finally, many banks face significant challenges as science and technology advance. Large sums of money are needed to invest in innovative technology. The bank must have the human resources, knowledge and ability to use these new advance technology and skills.

#### ***4.2. Digital transformation of some countries in the world in the banking industry***

##### ***4.2.1. In the USA***

In the European region, the USA is the country whose market has the most vibrant banking industry in the world, especially the strong explosion of digital banking. For over a century, leading banks in the USA have not only made endless effort to meet the growing needs of customers but also played a leading role in promoting economic growth in the community. The birth of Mobile Banking marked the digital transformation of American banks a decade ago. Up to now, banks in the USA have successfully applied AI to recognize customer voices, provide virtual assistants for initial contact customers, answer customer questions, consult and guide customers during their transactions. According to CBA (2022), banks in the USA have been investing significantly in technology to serve customers better and better.

Digital transformation implementation has brought about certain successes for Bank of America which has fully automated with



Chatbot Eric to support customers on their mobile applications, or set up robot branches to install a series of tablets at branches so that customers can take their initiative to carry out basic transactions by themselves without needing a teller (Lê, 2021).

In addition, the USA has greatly succeeded in the cooperation relationship between its banks and Fintech companies in conducting digital transformation activities. US Bank highlighted the benefits of combining with Fintech in improving banking business processes, including using Fintech's AI/ML analysis tools to analyze data structures and assess customers' asset portfolios, especially in the lending process (Department for International Trade, 2021). The research results revealed that "LendIt Fintech Bankers Survey" (2020), there were 58% of senior officers at banks in the USA assumed that the cooperation between their banks with Fintech companies was an important strategy for the bank, 84% of respondents said that they were willing to collaborate with Fintech ones from the UK. Banks in the US regard Fintech companies as a vital partner in their development plans. To avoid making differences in corporate culture, banks in the USA have given priority to making a choice of Fintech partners as suppliers rather than partners only to build digital products or solutions for banks (Đặng, 2021).

#### *4.2.2. In Singapore*

In the history of digital banking transformation, GDBS Bank in Singapore is the first digital bank in the world. GDBS has made plenty of advances in digital technology, and this bank is one of the best digital banks today. GDBS reported that the digital banking transformation

process needs to be implemented in stages from customer contact to the promotion support stage, which can ensure the automation of processes and services, thus minimizing human operations (Huỳnh, 2021). There are some outstanding services of GDBS, such as the application of smart technology and highly strong security capabilities, which will bring peace of mind to customers. Moreover, with the aim of achieving a leading position in the market, GDBS is also deploying new technologies such as 5G, IoT, Blockchain technology, and quantum computing (Henderson, 2020). These new explorations will boost and improve business results, and they also open new experiences for customers.

Apart from GDBS, UOB is also a popular bank in Singapore, which has invested remarkably in digital banking transformation. UOB invested S\$2 billion in improving the quality and sustainability of its digital infrastructure and services in its key markets of ASEAN and China between 2014 and 2019. At present, the bank is investing an additional S\$500 million to expand its digital partner who rebuys digital technology and API programming footprint as well as improve customers' requirements via new digital initiatives, hyper-personalization, and self-service products (The Business Times, 2021).

Overall, both GDBS and UOB banks concentrate on investing in financial and human resources to conduct digital transformation strategies successfully, especially as they pay much attention to building digital ecosystems. Recently, the Singaporean Government has given priority to the budget and favorable mechanisms for GovTech to build a strong force in technology, which helps to deploy, research, and develop digital solutions and platforms, especially for the finance and banking sector.

#### 4.2.3. In China

China has one of the world's most dynamic economies; electronic payments are used everywhere, including when people take taxis, go to the market to buy groceries, or rent bicycles on the street. Because Alibaba's AliPay and WeChatPay have a sizable ecosystem and Chinese consumers are accustomed to utilizing domestic goods, China has succeeded in implementing mobile money. As a result, China's e-wallet applications have a sizable users (Đoàn, 2022).

WeBank (China) has effectively applied AI to develop virtual assistants for first-contact customer service, answering customers' inquiries and offering consultation and direction. The AI operator will communicate with the counsel and automatically record additional questions and answers in the event that the anticipated response is not sufficiently dependable. This will enable the consultant to provide future consumers with extremely accurate replies. Banks have also advanced the use of AI in customer service.

The Chinese Government concluded that digital finance is still fundamentally a form of finance when it comes to overseeing and controlling the evolution of digital banking. Thus, it is unable to circumvent restrictions like concealing financial risks or allowing mutual influence inside the financial system. As a regulator, the Chinese Government has determined that certain aspects of managing the digital financial transformation-such as protecting clients and capital, safeguarding information security, and combating financial crimes and money laundering-need significant actions.

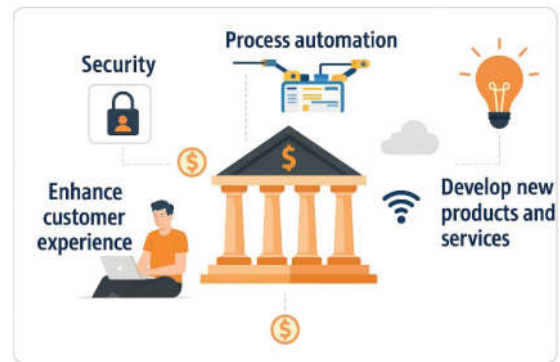


Figure 2. Issues that banks need to prioritize when digitally transforming

(Source: Tri thức trẻ newspaper)

#### 4.2.4. In Japan

Regarding digital infrastructure, the Japanese Government prioritizes funding research and advancing economic digitization. The Strategic Innovation Program (SIP), the Moonshot Research and Development Program, and the Public/Private R&D Investment Strategic Expansion Program (PRISM) are three significant R&D initiatives in the digital transformation of the Japanese economy. The Japanese Government will create the Digital Agency in 2021 to direct state budget funds toward the use of information technology and suggest creative projects to advance the economy's digitization. (Nguyễn & Lê, 2022)

The Japanese Government regards digital finance as a tool to develop customer satisfaction and social welfare for the economy, and its policies are centered on promoting digital financial transformation towards benefiting the masses. The Integrated Innovation Strategy is one of the most targeted policies; it was put into effect in 2021 with the intention of promoting the construction of new-generation data centers, expanding the manufacturing of cutting-edge semiconductor technologies, and encouraging academic institutions to engage in biotechnology and artificial intelligence initiatives. The Delta Wall V policy, which has come into effect

since 2020, is one of the laws that the government has also released to control cyber threats in financial firms' activities.

### **4.3. Discussion**

Based on the digital transformation experiences of some typical banks in the USA, Singapore, China, and Japan, the solutions to the digital transformation strategy of Vietnamese commercial banks are given as follows:

First, the Government and the State Bank play an important role in effectively implementing the digital transformation strategy in the Vietnamese banking industry. Actually, commercial banks need support and to be made in the best condition by the investment of state management agencies. In particular, it is necessary for state management agencies to complete the legal framework related to the process of operation and development of the digital transformation strategy of the banking industry as soon as possible. This could include regulatory adjustments, financial incentives, and public-private partnerships to support digital transformation. Additionally, step-by-step strategies for Vietnamese banks include investment in AI-driven banking, cybersecurity upgrades, and customer engagement initiatives. The legal corridor must ensure an entire ecosystem, including state management agencies, banks, customers, and the related third parties, which are Fintech companies. Vietnamese Government can learn from the experiences of the American, Singaporean, Chinese, and Japanese Governments not only in cooperating and building a safe and efficient operating environment for Fintech companies but also in creating a healthy competition between Fintech and Vietnamese commercial banks. Apart from that, Vietnamese banks apply cybersecurity regulations,

and the Vietnamese government has been strengthening its regulations on cybersecurity and data privacy. As a result, banks are required to take advanced security measures such as multi-factor authentication (MFA) and encryption with the aim of protecting customer information.

Second, it is essential for commercial banks to actively change their business models towards multi-channel integration and financial technology innovation, as well as to build a comprehensive ecosystem for banks. Based on the experiences of banks in the USA, Singapore, China, and Japan, one of the key factors that speed up the success of digital transformation is the transformation of traditional banking channels. Besides, it is important to increase cooperation with Fintech companies to apply modern business models, shorten operating processes, and streamline personnel departments. Thereby, helping banks save costs, increasing convenience in banking operations, and fostering innovation in customers' experiences.

Third, the majority of successful banks in their digital transformation strategies are doing early research and actively applying the achievements of the 4.0 industrial revolution to their banking operations, such as AI, Big Data, Cloud Computing, IoT, etc. One of the most popular countries that has successfully applied those achievements is the USA. It had early access and boldly promoted the development of AI in all fields, such as banking. Although leading banks in the USA have gained significant success in applying 4.0 technology, it can be seen that increasing investment and research on technology applications for business operations is still of great interest and main attention for banks.

Finally, one of the crucial factors that brings about the success of the

banking digital transformation strategy is the customer. This is because the products and services carried out by banks on digital channels must be actively interacted with by customers. However, financial and banking services will become more complex when customers' transactions are conducted on digital channels. Therefore, it is necessary for the bank to support clients by providing advice, consultation, and planning. A vast number of banks that have succeeded in digital transformation in the United States, China, and Japan pay much attention to customer behavior and needs so as to protect customer interests, and they also provide customers with modern experiences when using financial services. Moreover, they are likely to increase customer trust when conducting digital financial transactions with banks.

## V. Conclusion

Vietnam's banking sector is in the process of a dynamic digital transformation, which is supported by a robust mobile-first culture, growing fintech innovations, and government initiatives aimed at boosting a digital economy. It is important that Vietnam should be fully aware of the precious experiences from some countries in the world and then know how to apply reasonably with the setting of Vietnam in the given 4.0 technology boom, which is one of the key factors to determine the success of the digital transformation process in the banking system.

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## XU HƯỚNG CHUYỂN ĐỔI SỐ TRONG NGÀNH NGÂN HÀNG Ở MỘT SỐ QUỐC GIA VÀ CHIẾN LƯỢC TRIỂN KHAI CHUYỂN ĐỔI SỐ TẠI VIỆT NAM

*Nguyễn Thị Quý\**

**Tóm tắt:** Trong kỷ nguyên số hiện nay, chuyển đổi số ngành ngân hàng đã trở thành xu hướng tất yếu trên thế giới. Ngành tài chính đang trong quá trình chuyển đổi mạnh mẽ với công nghệ số để định hình lại các sản phẩm, dịch vụ tài chính như thanh toán, cho vay, bảo hiểm hay quản lý tài sản. Trên thế giới nói chung và Việt Nam nói riêng, trong bối cảnh công nghệ thông tin phát triển mạnh mẽ và tỷ lệ tham gia của các công ty tài chính, công nghệ ngày càng cao vào lĩnh vực này, chuyển đổi số là điều bắt buộc đối với các ngân hàng. Đặc biệt, nhu cầu của khách hàng thay đổi nhanh chóng và áp lực từ việc giảm chi phí hoạt động, tăng hiệu quả kinh doanh khiến các ngân hàng không còn lựa chọn nào khác ngoài chuyển đổi số. Bài viết tập trung vào hoạt động chuyển đổi số của các ngân hàng thương mại Việt Nam, đồng thời phân tích một số phương thức chuyển đổi số của các ngân hàng tại Hoa Kỳ, Singapore, Trung Quốc và Nhật Bản. Sau đó, đề xuất một số chiến lược cho các ngân hàng thương mại Việt Nam trong quá trình triển khai các chiến lược chuyển đổi số hiệu quả.

**Từ khóa:** chuyển đổi số, ngành tài chính, chiến lược, công nghệ.

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