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BANKING HUMAN RESOURCES BEFORE THE DEVELOPMENT OF ARTIFICIAL INTELLIGENCE AI

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Abstract

The content of the article reflects the problems of human resources in the banking industry that change in quality and quantity before the impact of artificial intelligence AI. After analyzing the status of the effects of artificial intelligence on the banking industry in the world in general and Vietnam in particular, the article has made a comment on the current situation of human resources in the banking industry in Vietnam. Apart from that, the author has proposed solutions to improve the quality and apply for the number of labor positions required in the digital transformation process of the banking industry.

Keywords: *AI, digital technology, digital transformation, artificial intelligence, banking.*

1. Introduction

In recent years, “Artificial Intelligence” (AI) has been increasingly mentioned and applied in various fields such as education, manufacturing, healthcare, business, and finance, etc. In particular, the banking industry is one of the pioneers in applying AI to customer service, business promotion and effective risk management. AI helps support 24/7 customer service from opening payment accounts, online savings, setting up periodic money transfers, checking bank statements through apps and digital banking transaction points. AI has been contributing to the transformation of the banking industry in the digital era 4.0, helping the banking system automate processes, improving operational efficiency, and enhancing customer experience. Therefore, it is necessary and useful to learn about the impacts of artificial intelligence AI on human resources in the banking industry. Alternative solutions and appropriate changes in the operating system will help and contribute to the implementation of the sustainable development strategy of Vietnam's banking industry.

2. Theoretical basis and research methods

2.1 Theoretical basis

2.1.1 Artificial Intelligence

In contrast to the intelligence exhibited by humans or other animals, artificial intelligence (AI) refers to the perception, synthesis, and inference of information made by computers. Speech recognition, computer vision, interlanguage translation, and various mappings of inputs are a few examples of activities where this is done.

Advanced web search engines, like Google Search, recommendation systems, speech recognition software, like Siri and Alexa, self-driving cars, generative or creative tools, like ChatGPT and AI art, automated decision-making, and winning at the highest levels of strategic game systems, like chess and go, are just a few examples of applications for AI. (Wikipedia, 2022)

2.1.2 General issues

Physicist Stephen Hawking and billionaire Elon Musk have warned about the potential threat of artificial intelligence even though AI is helping a lot in life. Stephen Hawking said, "Artificial intelligence could be the end of humanity when it develops to its fullest extent."

When AI is fully developed, it could replace humans in intellectual jobs such as healthcare, catering, automated production lines and office work. Therefore, the unemployment rate in positions replaced by AI will increase.

According to Bill Joy, Co-Founder and Chief Scientific Officer of Sun Microsystems: "There is a huge problem for human society when AI becomes ubiquitous, in which we will become dependent. When AI becomes mainstream, we will allow ourselves to listen to the decisions of machines, because they simply always make more accurate decisions than humans."

According to Andrew Maynard, physicist, and director of the Center for Science Risk Research at the University of Michigan: "When AI combines with nanotechnology, it can be a breakthrough in science, and it is the greatest threat to humans. While the US Department of Defense is working on the Autonomous Tactical Robot (EATR) project, in which robots will use nanotechnology to absorb energy with organic substances that could be the human body. That's really the biggest threat, as nanorobots generate their own energy by eating organic matter from plants and animals, possibly even humans. It sounds like something out of a sci-fi movie, but it's entirely possible. Maybe we should start being careful now." (Wikipedia, 2022)

2.2 Research methods

To carry out this article, the author uses qualitative research methods mainly with tools such as descriptive statistics, analytical statistics, comparison, systematization, etc. To serve the research content, the research is the basic theories and general issues of artificial intelligence affecting human resources in the banking industry. The author uses data sources taken from books and articles published in journals in the field of banking at home and abroad, including master's theses and doctoral theses on artificial intelligence and its impact on the banking workforce. To serve to analyze the current situation of labor resources in the banking industry before the development of artificial intelligence, the author uses data sources and information taken from the internet, from banking industry reports.

3. The situation of human resources of the banking industry before the development of AI artificial intelligence

3.1 In the world

Most banks (80%)- Capital One, Citi, HSBC, JPMorgan Chase, Personetics, Quantexa, and U.S. Bank- are highly aware of the potential benefits presented by AI and machine learning, according to OpenText survey of financial services professionals. In fact, many banks are planning to deploy solutions enabled by AI: 75% of respondents at banks with over \$100 billion in assets currently implementing AI strategies, compared with 46% at banks with less than \$100 billion in assets, have seen by Insider Intelligence. Certain AI use cases have already gained prominence across banks' operations, with chatbots in the front office and anti-payments fraud in the middle office.

Banks can use AI to transform the customer experience by enabling frictionless, 24/7 customer service interactions — but AI in banking applications isn't just limited to retail banking services. The back and middle offices of investment banking and all other financial services could also benefit from AI.

Banks are leveraging algorithms on the front end to smooth customer identification and authentication, mimicking live employees through chatbots and voice assistants, deepening customer relationships, and providing personalized insights and recommendations.

AI is also being implemented by banks within middle-office functions to assess risks, detect and prevent payments fraud, improve processes for anti-money laundering (AML) and perform know-your-customer (KYC) regulatory checks.

The winning strategies employed by banks that are undergoing an AI-enabled transformation reveal how to best capture the opportunity. These strategies highlight the need for a holistic AI strategy that extends across banks' business lines, usable data, partnerships with external partners, and qualified employees. (Eleni Digalaki, 2022)

The banking sector in Hong Kong has been at the forefront of technological innovation in recent years, with digital transformation and automation reshaping the industry. One of the most significant technological trends impacting the banking sector is the rise of artificial intelligence (AI) and machine learning. These technologies have the potential to revolutionize the way that banks operate, but they also present challenges for HR professionals in the industry, particularly in the areas of risk management and compliance. However, these technologies also present challenges for HR professionals in the industry, including the need for upskilling and reskilling programs and the potential impact on job roles. HR professionals need to be proactive in managing these changes and developing training and development programs that enable their employees to keep up with these developments and remain competitive. Additionally, HR professionals can leverage AI and machine learning to improve their talent management strategies and identify potential risks and opportunities in their operations.

In conclusion, HR professionals in the banking sector in Hong Kong must embrace AI and machine learning as part of their talent management strategies to remain competitive and compliant with regulatory requirements. By investing in upskilling and reskilling programs and leveraging these technologies to improve their operations, HR professionals can position their organizations for success in the digital age. (Human Resource Management, Payroll Outsourcing, 2023)

3.2 In Viet Nam

In Vietnam, artificial intelligence has been widely applied in many fields from services, health care, education, transportation, entertainment, and especially the banking industry. For the banking and finance industry, AI technology is being integrated into the following 7 popular applications:

Fraud and fraud detection

Most banks today are applying AI technology to detect fraudulent transactions and give timely warnings to customers. AI uses the way to analyze and review behavior and patterns when making transactions through accounts when logging in on online applications in the past and present.

At Orient Commercial Joint Stock Bank (OCB), they cooperated with IBM to deploy a fraud management system based on IBM Safer Payments. This solution has also been deployed by IBM at many major banks around the world and OCB has become the leading bank in Vietnam pioneering the use of artificial intelligence AI in risk management. Specifically, the platform allows the bank to prevent fraudulent activity before it occurs, while also ensuring that the correct transactions of customers are not stopped due to errors. In addition, this technology platform also helps OCB to build and apply models to prevent emerging fraud threats, thereby proposing effective countermeasures. With the successful implementation of Safer Payments, banks are able to adapt to new threats faster and detect fraud with greater speed and accuracy without depending on vendors or data experts.

At VPBank, a transaction monitoring system based on artificial intelligence has been developed to detect frauds and risks through VPDirect; supporting technology research, improving the security of the banking system and applying it to platforms. (Minh Thanh, 2023)

Chatbot/Virtual assistants/AI Voice

Chatbot is understood as a software that automatically interacts, chats with users by text message, based on pre-programmed scenarios. Chatbots are available 24/7, and users converse with a chatbot through chat or voice interfaces, which can interpret and process words or phrases and respond with pre-programmed responses. Customers benefit from this product because it is an automated program that interacts with customers like a human and does not cost much.

Virtual assistants are designed to take input and perform tasks via voice (voice) commands. They can interpret the human voice and is supported by an artificial neural network that allows us to predict the user's intention regardless of the randomness of the query. Since virtual assistants are powered by AI, it is possible to learn user preferences and behavior over time, evolve and become smarter. When the virtual assistant is integrated with the personalization feature, it will understand the behavior and predict the needs of each customer, from which the virtual assistant can recommend and advise suitable financial and banking products.

Banks in Vietnam have soon applied Chatbot online support tool and are constantly improving and perfecting many new functions to serve customers more quickly and professionally.

TPBank is the first bank in Vietnam to apply AI when it launched the virtual assistant TAio on Facebook in July 2017. Timo of VPBank, Viet A Bank, HDBank, Vietcombank.... are banks that bring Chatbot applications to replace part of the work of customer care's staff.

In October 2018, Eximbank deployed the online support tool ChatBot developed from FPT.AI artificial intelligence platform - serving customers 24/7 with the name MAI on Eximbank's website as well as on Facebook fanpage. The application will improve more and more to better understand customer needs to improve the application's features and serve customers better. With this application, customers' frequently asked questions about Eximbank's products and services will be answered immediately by MAI and provide users with appropriate instructions and contact methods at any time. (July 24).

In March 2022, Vietinbank upgraded the Vietinbank Chatbot version, with this new version, VietinBank Chatbot completed and updated the following functions: Looking up information, card products and services; complaint tracing, card locking; Information and digital banking services: Register a payment account via eKYC; support, temporarily lock the account; Look up information directly in real time (Realtime): Exchange rate, interest rate, location of nearest ATMs and branches; Information on procedures: Consumer and business loans; send money; loan; LiveSupport channel directly supports online customers....In the coming time, VietinBank Chatbot will continue to be researched and deployed on Zalo, VietinBank iPay; application of modern technology such as recognition, voice authentication, query, support (VoiceBot, Biometric). (Vietinbank electronic newspaper, 2022)

In September 2022, Asia Commercial Bank (ACB) launched a new generation AI Bot system. ACB AI Bot is developed based on VinBase Chatbot product (belonging to VinBase ecosystem) of VinBigdata. ACB AI Bot is a new generation intelligent virtual assistant with three advantages: intelligent interaction, self-learning, and continuous development ability along with the ability to recognize emotions to help the bank understand and serve customers well. than. This virtual assistant can give accurate answers to questions and requests from customers, owning more than 1,000 different customer care scenarios with near-instant response times (under 0.5 seconds). In the future, ACB AI Bot will have more advanced features such as broadcasting digital marketing campaign, information retrieval, agent management. In the first week of launch, ACB AI Bot recorded more than 1500 new users and an average of more than 3000 visits. It could chat every day with positive feedback from customers.

VIB International Bank is also one of the banks interested in deploying AI applications, MyVIB 2.0 stands out with AI Voice technology that allows users to convert voice into text and vice versa. In return, the user only needs to read the order according to the form to be able to make a transfer, top up, unlock/lock the card, in less than a minute. With the superior features of MyVIB 2.0, customers can easily perform financial transactions even without their hands free. (VIB e-newspaper, 2023)

Decision support for loans and credits

AI can be used to look at a customer's credit history and behavior to assess creditworthiness and appropriate credit limits. In addition, the system applying AI technology can also warn possible cases of bad debt to help banks make appropriate lending decisions.

In May 2019, MSB was the first bank to apply AI in credit card opening, MSB and its partner Five9 applied AI to search and evaluate potential customers for credit card products. AI will assess the financial capacity and repayment ability of customers to reduce traditional procedures. The application has brought many benefits to customers opening a bank credit card for the first time such as: customers do not need to prove their income but still get pre-approved for the card's limit; Super time saving: From registration to receiving card in just 24 working hours; Extremely simple and convenient when registering to open a card when interacting completely online. (Khong Thu, 2019)

In 2019, TP Bank has successfully applied AI to management, TP Bank has put into operation many modern systems such as CRM - customer relationship management system or LOS - loan management system, helping the bank to strongly increase its ability to find new customers, digitizing documents, process documents using AI technology to approve loans quickly, making TP Bank one of the fastest banks in the world. It approved customer's loan application fastest in the market. (TP Bank electronic newspaper, 2019)

Follow the current trends in the market

By applying big data (Big data) and AI, banks will be able to predict market trends, cash flows and stocks. Moreover, they can also access market sentiments and propose proposals. They could offer reasonable investment options and suggest the right time to invest in stocks or warn of potential risks.

Realizing the role of AI and Big Data, MBBank pioneered the implementation of Customer Insight, Smart Channel, Customer onboarding, etc. projects, helping to understand customer needs and behavior, gain a deeper understanding of the individual. optimize the experience through the application of advanced automation technology. In 2021, MBBank has developed a series of outstanding utilities integrated on the digital banking platform through the MBBank App and Biz MBBank to serve customers. (Truong Tinh, 2021)

Data collection and analysis

Banks and financial institutions can have up to millions of transactions per day, the amount of information generated from that is extremely large and it would be very difficult if only humans handled such amount of information. AI can help solve this problem by more efficiently collecting and analyzing data, improving the user experience.

Increase customer experience (CX hay Customer Experience)

The integration of AI in banking and financial services will help improve customer experience and comfort. For example, eKYC (Electronic Know Your Customer) technology is used to verify a customer's identity when using a bank's services such as opening an account, depositing money, withdrawing money, etc. The customer using the service is the owner. All customer identity verification regulations are completely automated and take place 100% online, based on customer identification technology using

artificial intelligence (AI), biometric information (biometrics). In addition, eKYC helps banks to reduce manpower and personnel costs. eKYC data can be transmitted in real time automatically without any manual intervention of human, eKYC helps banks to build a unified data warehouse of customer information. Most Vietnamese banks now use eKYC such as: MSB, Nam A Bank, HD Bank, BIDV, etc.

Process Automation

RPA (Robotics Process Automation) solutions - in the financial industry is the use of robotic applications to supplement (or replace) human activities that can help increase operational efficiency and increase accuracy as well as accuracy. such as reducing costs by automating repetitive tasks, thereby allowing users to focus on other more complex processes.

At MB Bank, the RPA project is one of five initiatives leading the bank's digital transformation strategy. In December 2021, MB Bank applied RPA to 40 processes with 23 robots, of which two were self-developed by MB Bank's Information Technology department. MB Bank intends to research Robotic technology that combines AI and Machine Learning technologies to develop thinking robots to participate in complex, thinking-related processes related to decision-making. (Truong Thinh, 2021)

At HDBank, most of the transactions with customers from opening accounts and passbooks, electronic customer identification, data analysis, to internal processes such as timekeeping, complaint handling, order approval... are all conducted by virtual workers - automation robots based on akaBot platform. The robots that helped HDBank have improved processing speed 30 times, saving transaction time from 3 minutes to just a few seconds, reducing manual operations to 20% and increasing accuracy to 100%.

At BIDV, automation has been applied since 2019 on a small scale in three customer service, retail and commercial divisions BIDV and akaBot deployed robots for 11 business flows at the Digital Banking department, Center Card and Customer Care Center. In BIDV's digitalization strategy for the period 2021 - 2025, with a vision to 2030, BIDV affirmed that applying robots to automate internal processes is a mandatory trend to improve operational efficiency and save costs.

TPBank, a pioneer in process automation application technology, deploys 5 new robots per week and uses up to 300 robots in operations, saving hundreds of employees and providing unlimited transaction experience. term for customers. Thanks to extensive technology application, TPBank has saved 60% of loan disbursement time and 60% of transaction time at the counter. (Electronic Youth Newspaper, 2021)

According to the banking industry report in 2022, statistics show that 94% of Vietnamese commercial banks have invested in digital transformation, 40% of banks have put digital transformation into a strategic vision in 5-10 years next year. According to the "Digital transformation plan of the banking industry to 2025, with a vision to 2030" of the State Bank of Vietnam, the goal towards 2025 is to ensure that 60% of credit institutions have the proportion of revenue from digital channels reaching over 30 %.

According to statistics by 2022, the State Bank has deployed 62/370 online public services at levels 3 and 4 and is upgrading 25 administrative procedures to level 3 and 4 public services. In the digital transformation index of ministries, ministerial-level agencies, Governmental agencies, and provinces and centrally run cities of the Ministry of Information and Communications, the State Bank was ranked 1st in terms of security ranking index. network information security, the second on the digital institutional index and the fourth on the digital transformation activity index. In addition, most credit institutions are planning to develop and implement digital transformation strategies. Many basic operations have been digitized 100%; Many banks have recorded that more than 90% of customer transactions are done through digital channels with an optimal cost-to-income ratio, only 30-40%.

Banks have applied artificial intelligence, machine learning, and big data technologies in customer assessment, classification, and disbursement decisions. Some outstanding products are SmartBanking, Omni iBank system, feature development on automatic teller machines.

Payment activities in the economy are carried out safely, efficiently, and smoothly. In the first 10 months of 2022 compared to the same period in 2021, transactions through the interbank electronic payment system increased by over 4.6% in quantity and over 33.06% in value; electronic clearing and financial switching system increased by 99.79% in quantity and 106.09% in value, non-cash payment transactions increased by 87% in quantity and 34% in value. (MBS Research, 2022)

3.3 General assessment of human resources in the banking industry in Vietnam before the development of artificial intelligence AI

When banks apply AI to automate processes and services through RPA, Chatbot/Virtual assistants/AI Voice, eKYC, etc., there will certainly be no need for many operators, so staff reduction will occur. go out; The bank will save the cost of hiring human resources, but the risk of job loss is very high.

Pham Hong Hai - former CEO of HSBC Vietnam in the next 5-10 years more than 50% of jobs in the banking industry will be replaced by machines.

In recent years, when the speed of digitization has accelerated, banks have also drastically cut staff. In 2019, there were 6 banks that cut more than 4,000 employees, of which VPBank was the bank that cut staff the most with more than 2,030 employees at the end of 2019. When applying digitization to the process through applications More than 30% of small loans and cards are made online by VP Bank, money transfer, borrowing, and shopping needs are all done via Internet banking or VP bank online, the machines make automatic payment. 24/7 operation is also flexible for customers and replaces the work of bank tellers.

However, the application of AI will also create new jobs suitable for the digital transformation process. Although the demand for banking personnel will no longer increase as strongly as in the past, the demand in some segments for digital transformation will be very large and focus on the retail and digital banking segments. According to a survey by PwC, nearly 80% of bank leaders are worried about attracting human resources who are knowledgeable about digital transformation and innovation, and the workforce for digital banking will be scarce.

The problem for banks today when accelerating digital transformation will create changes in the banking workforce. The demand for general human resources in the financial industry will decrease and require a high-quality, adaptable, and innovative workforce to provide personalized products and services that enhance customer experience. According to Navigos Search, banks need positions related to digital transformation such as: Business Development for digital banking services, Customer experience analysis and information technology such as Project Manager, Analysis Data Analysts, Cybersecurity Specialists, Credit Analysts, Programmers...

However, the number of candidates who can meet the above needs is very rare because the banking industry is a highly specialized industry, so in addition to the factors of understanding digital transformation, it is required to have experience and knowledge about digital transformation, financial services, understanding the internal state of the bank. Therefore, some banks instead of recruiting from outside candidates, prioritizing hiring people with experience working abroad, banks have also organized training on digital transformation knowledge for their staff. (Cafef e-newspaper, 2020)

4. Conclusion and proposed solution

4.1 Conclusion

As AI technology is advancing deeply and widely in the banking industry, the demand for quantity and quality of labor will have to change to be more suitable. Job positions are at risk of fading and disappearing such as: Telesale, teller.... According to Business Insider's research, there will be 40 banking jobs affected by major changes in the digital transformation process due to the addition or replacement of jobs by RPA, Chatbot/Virtual assistants/AI Voice, eKYC... However, the demand for high-quality human resources will increase to be able to meet digital transformation. In terms of labor quality, currently some human resource banks have not met the professional demand in digital transformation, and training institutions have not kept up with the trend of technology development.

In fact, in recent years, credit institutions have implemented a few solutions to recruit personnel through the recruitment plan of overseas Vietnamese candidates, even foreign experts. The force of foreign experts and overseas Vietnamese helps the bank solve pressing problems in technology, besides helping to transfer knowledge and technology and improve the quality of domestic personnel through training for the team. However, the salary paid to this group of personnel is often very high, causing a disturbance in the salary level between Vietnamese personnel who have been with the organization for long time and newly recruited personnel. Besides, foreign candidates, overseas Vietnamese will have differences in thinking, how to coordinate with the existing internal team, long-term attachment, and development of this team as the core force will be difficult. When the gap between supply and demand for high-quality human resources is widened, the labor market becomes more and more competitive in attracting talents.

In the market, there are also banks that choose to hire external consultants or recruit technology staff who do not have banking experience in training; However, due to the dearth of human resources with experience in the banking industry's digital transformation, some other banks also choose to hire consultants or overseas professionals in addition to hiring staff from similar fields, such as e-commerce or financial technology. (Hong Dung, 2022)

4.2 Proposed solution

External short term, to meet the urgent need for high-quality human resources knowledgeable and experienced in digital technology, recruiting overseas Vietnamese and foreign experts, hiring external consultants outside or recruiting technology institutes, between the leadership and recruitment / cooperation personnel must clearly define the vision and goals, need to understand correctly and do it right. Departments and departments must work together to move towards digital transformation, changing both corporate cultures, not just technology. Organizations and individuals must determine the mentality that there will be many new tasks and challenges that need to be overcome because the digital transformation environment is a new segment of the trend.

Because digital transformation is a new field that requires a lot of new knowledge, both employers and employees must invest in training, acquiring new technologies, knowledge and working models.

Organizations need to build a quick, clear, convenient working mechanism, streamlined process, and a flexible and appropriate compensation mechanism to retain high-quality employees. They need to clearly define their career goals and long-term opportunities when sticking with the organization because the opportunity to move to high positions is often faster when the candidate has experience and ability but requires employees must understand the organization and work a certain time.

In the long-term 5-10 years, to meet the needs of human resources for digital transformation, it is necessary to prepare in education and training. Universities must continuously update, develop, and innovate training programs to increase applicability, reduce academic modules, and supplement modules such as digital banking, financial technology, and commerce. e-commerce, modern banking services. The

training program should equip knowledge through updating disciplines, lectures, content, core knowledge, providing basic and advanced foundations; on skills that need to be equipped with learning methods and soft skills training; on attitudes that need to be reinforced and fostered the attitudes necessary to adapt to digital transformation. Schools need to measure and evaluate how well learners achieve their output standards to meet the needs of digital transformation.

In addition, educational institutions need to coordinate with banks to train human resources in line with market needs, increase practical experience and practice for students, promote international cooperation, training high-quality human resources, capable of meeting job requirements in an international environment.

In the context of digital transformation in the next 5 to 10 years, the job position as well as the quantity and quality requirements of the banking industry will have many changes. Workers need to actively improve their qualifications, master technology and practice diversifying skills, equipping, and fostering qualities that machines and technology cannot replace; regularly update new trends, flexibly adapt to changes. (Prof., Dr. Le Thanh Tam, MSc. Hoang Thi Huyen, 2022)

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978-604 79-3782-0

ISBN: 978-604-79-3782-0

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