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**THE CHANGE OF HUMAN RESOURCES ROLE IN THE  
BANKING DIGITALIZATION ERA**

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*Abstract*

This study aims to determine the dominance of the role of Human Resources with Digital Technology in the Indonesian banking world along with technological developments. The Bank's consideration of replacing humans with machines is that the maintenance costs of digital technology are cheaper compared to the cost of human treatment; government regulations governing the change of role; the reach of digital technology is able to reach remote areas following the reach of telecommunications; and the availability of optimal digital technology services according to customer needs (365 days/year of service can be accessed without down time). This research is qualitative with data collection methods in the form of observations and interviews of parties related to digital technology activities, namely the Operations and Information Technology Division in 2 Banks in Indonesia (PT BNI (Persero), Tbk. And PT Bank Bukopin, Tbk). Questionnaires are prepared according to the theory and research needs. Respondents are staff and managers especially those in charge of the Operations and Technology Division. The results of observations and interviews state that the role of digital technology dominates replacing human roles in the banking world. This is known from the data of the increasing number of digital banking machines, the increase in digital transactions, the increasing development of banking products based on e-banking, the decline in labor and operational costs along with the increase in investment in technology. The most dominant factor is the increasing number of banking transactions through e-banking, especially in e-commerce transactions.

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**Keywords:** Human resources management, digital technology, e-banking.



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## 1. Introduction

2018 is the year that marks the development of generations and technology is becoming more advanced, sophisticated and modern. Digital technology is a daily consumption of generations of people in the world, without which life no longer feels alive. People in the world have relied on technology for their lives, especially those related to financial activities. The community has begun to realize that time is very valuable and valuable or with the saying "Time is Money" so that the sophistication of technology that is able to meet the needs and desires of the people is in great demand and developed as widely as possible in order to achieve world community goals, namely time effectiveness and process simplicity.

Currently in the banking world, technological advancements are used by each bank and become one of the competitive advantages that have an impact on customer satisfaction and increased profits. Banks in Indonesia are competing to be able to satisfy customers by offering various products related to technological sophistication. Flexibility is one of the keys to the success of banks in earning profits. The range of banks began to target remote and remote areas. But along with the development of banking equipment, human use and place (in this case the branch office) in daily operations became one of the dilemma factors when compared with the achievement of profit. The opening of branch offices to remote areas accompanied by the placement of human resources in these places is considered to be less effective and efficient because it often creates a variety of new problems such as internal fraud caused by weak monitoring due to the location of branch offices far from the head office. In addition, the process of educating unbankable customers is not as easy as compared to bankable customers and is located in big cities so that it requires more persistent efforts.

The results of research from Béziade and Assayag (2014) state that in 2013 the number of users of online banking services increased to reach the figure of almost 25 million users. The achievement indicated that no bank was able to increase the use of banking services without a digital strategy. The research succeeded in revealing that digital strategies will greatly affect the behaviour and expectations of customers in relation to each of their banks, so that in order to provide a better response a bank must adjust and transform itself more deeply. Digital banking also has an impact on the organization and the banking profession, especially 3 (three) types of professions including: Customer Advisor, Back Office, and Branch Manager. This is because it is not easy to provide a complete definition related to the characteristics and impact of digital banking considering that the nature changes rapidly and keeps changing so that in the future there will be evolution in all banking sectors and Human Resources who have superior leadership in winning the competition. Das, Gryseels, Sudhir and Tan, (2016) in his study concluded that of the 20 selected markets in the world, Indonesia was still in the early stages of digitalization which showed the behaviour of its people most active in using gadgets but still lacking in the use of modern technology. In addition, the infrastructure is also weak, not supported by the existence of laws that protect user privacy and internet penetration, including in the low category. Deloitte (2016) argues that the digital era runs so fast that it changes the way organizations think, operate, and make decisions that greatly affect the functioning of the Human Resources Department in the organization. Currently the role of the Human Resources Department in managing people has begun to change. The recruitment process at the company has begun to shift from the paper based test to the computer based-test. Not only that, the people recruited

must also have ability to use the latest technology and be added with the lead capability that is currently very much needed by some of the world's big companies.

In connection with some exposure to the results of these studies, this research was conducted with the aim of exploring more in comparison and changes in the role of Human Resources with Digital Technology, especially in the banking industry today.

### **1.1. Human Resources and Digital Technology**

Discussions about Human Resources in organizations / companies are topics that are timeless. Human management in organizations has always been an interesting topic to research and discuss. The development of theories about Human Resources is very diverse and includes many things related to the management of Human Resources in the organization. Foss and Laursen (2012) states that the practices of Human Resource management have included development, retention of potential innovations, and organizational capacity. In order to achieve success in managing Human Resources, there are 3 (three) key roles in the practice of Human Resource management as an innovation effort in the organization, namely the role of input (input needed for organizational innovation), the role of realizing (the mechanism needed to bring innovation in organizations), and the role of maintaining (the mechanism needed to maintain the innovation potential of the organization). Alam and Mukherjee (2014) in their research stated that Human Resources in an organization is a unique thing that cannot be falsified by its competitors so that every organization must manage it and make it a competitive advantage that can win competition in similar industries. Human Resource Management is a key aspect that connects the modern world with the strategic management of the organization. Strategic management aspects are implemented through training programs, development, recruitment, and selection of employees whose discussion material includes the ability to use the internet and e-commerce so that employee capabilities are added to the organization's competitive advantage. The uniqueness of Human Resources in the form of the ability to run or operate technology becomes the interest of organizations to build it for the achievement of goals in the digitalization era. In addition to the uniqueness that deserves to be maintained, currently the role of Human Resources also includes the role of business partners as well as strategic partners (Riordan, 2017) so that the achievement of organizational goals is strongly influenced by this.

Current technological advances are inseparable from human daily needs. Its development from day to day is increasingly simplifying the process of human life and achieving time efficiency so that many things can be done without wasting a lot of time, energy, and costs. Ngafifi (2014) argues that current technology has been able to change patterns of relationships and human interactions. Technological sophistication in various fields such as health, agriculture, communication and information, and biotechnology has had a significant impact on changing patterns of human life. Human awareness of effectiveness and efficiency in various respects is increasingly accompanied by the emergence of new cultures such as the use of social media such as Instagram and Facebook as a venue for greeting friends and buying and selling various products with various searches. The lack of human adaptation processes in new technologies has resulted in their unpreparedness for the consequences that have resulted, namely the emergence of various diseases, increasing environmental damage to the loss of the social culture of society.

Nearly half or 54.68% of Indonesia's total population is active internet users (Association of Indonesian Internet Service Providers, 2017). If viewed by region in Indonesia, the majority of the population in Java is ranked the highest at 58.08% while when viewed from age, the results show that active internet users are 49.54% who range in age from 19 to 34 years. In this regard, the majority of Indonesians use smartphones to access the internet (at 44.16%) and the current trend in public behaviour has been changed by not being able to leave smartphones because all things that are daily necessities can be accessed via a smartphone.

Bank Governance Leadership Network (2018), stated that today's technologies made some impact in banking functions such as e-banking for e-commerce. The bankers should have skills to understand 'how to do' the technologies applied. Soon, they must be having the ability to navigate these changes to the workforces and kindly settle the adaptive process to the customers.

This statement is an indication that changes in the role and function of Human Resources in Banking have been replaced by digital banking technology so that the management of talent in the field of Human Resources is an interesting topic for further discussion.

## **1.2. Digital Banking Technology**

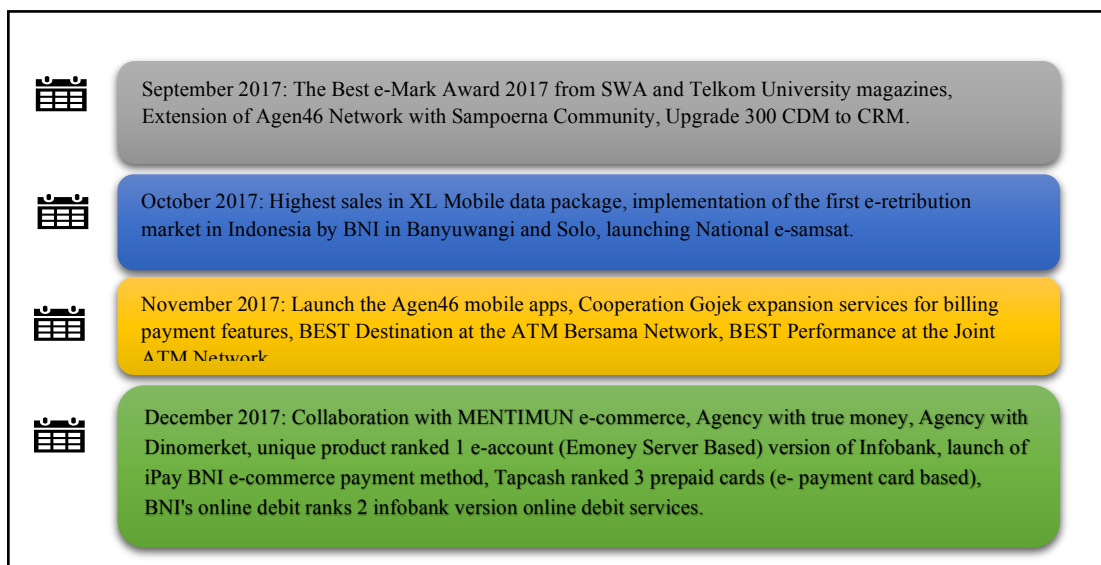
The development of digital technology has an impact on all sectors and industries, including financial industry and the banking sector. The beginning of the use of digital technology devices was since the existence of the internet that entered Indonesia and was welcomed with high enthusiasm from the people without thinking about the adaptation process. The sophistication of digital technology has finally brought Banking to a higher level and wider scope in order to meet the daily needs of customers.

One of the banks in Asia that has successfully implemented digital banking is DBS Bank. The motto or tagline '*World's Best Digital Bank*' is a transformation spirit of the Bank with a consistent and definite goal of continuous innovation in order to make banking activities fun. In 2017, DBS as the Bank of Singapore is committed to providing services that are 'Live More, Bank Less' where banking services from DBS are simpler, faster, and easier when compared to other banks (DBS, 2017). DBS's focus is currently on 4 (four) things, namely:

1. Achieving financial targets through synergy of business units and credit risk units and maintaining adequate credit provision,
2. Digital Banking as the foundation for the future of the Bank,
3. Integration of ANZ consumer business,
4. Improving the health of the Bank by strengthening audit and control.

Based on the above-mentioned matters, DBS was able to achieve a net profit of IDR 503 billion. In addition, the Human Resources Education and training program is one of the keys to DBS's success in improving the performance and quality of the Bank's performance.

One of the banks in Indonesia that began to switch to digital banking was Bank Negara Indonesia (BNI Sustainability Report, 2017). In 2017, some of BNI's achievements through digital banking products are as follows:



**Figure 01.** BNI Achievement Awards 2017

Based on these data, Bank Negara Indonesia is committed to continuing to develop its digital technology. This was marked by the launching of a product called AGen46 which aims to open banking access in all regions in Indonesia, especially in remote areas that are difficult to reach.

Bank Indonesia Regulation No.19/12/PBI/2017 defines Financial Technology as the use of technology in financial systems that produces new products, services, technology and / or business models and can have an impact on monetary stability, financial system stability, and / or efficiency, smoothness, security and reliability of the payment system. Furthermore, Payment System Service Providers are providers of payment system services as referred to in Bank Indonesia provisions governing payment transaction processing.

Research on Human Resources and Digital Banking Technology has been done previously by Yuyun Pirngadi, Basri Hasanuddin, Rahmatia, and Madris DPS (2017) who concluded that information technology does not significantly affect employee performance. However, the significance of the results of the analysis is considered not surprising given that the industry banks studied have limited ability to apply modern technology due to limited budgets. This has an impact on the weak competitiveness of Human Resources caused by the skills and knowledge of employees who have not increased due to budget constraints which have led to the absence of employee training and development.

The difference in research conducted by researchers with previous research is that in previous studies one of the hypotheses tested whether there was an influence between information technology on the performance of Bank employees, while in this study 59otallin the factors that led to changes in the role of Human Resources to Digital Technology in the Banking industry. The equation of this study with previous research is to jointly research about Technology with Human Resources and similarities in the intended data sources, namely the Banking industry.

## 2. Problem Statement

Based on the description above, the problems to be examined are as follows:

2.1. The factors that influence the changing role between Human Resources and Digital Technology in the Banking world today.

2.2. The most dominant external factors that influence the change of role between Human Resources and Digital Technology in the banking world today.

### **3. Research Questions**

Based on the description above, the problems to be examined are as follows:

3.1. What factors influence the changing role between Human Resources and Digital Technology in the Banking world today?

3.2. What are the most dominant external factors that influence the change of role between Human Resources and Digital Technology in the banking world today?

### **4. Purpose of the Study**

Based on the description above, the purpose of the study are as follows:

4.1. To find out the factors that influence changes in the role of Human Resources with Digital Technology in the world of Banking today.

4.2. To find out the most dominant factors affect the change in the role of Human Resources towards Digital Technology.

### **5. Research Methods**

#### **5.1. Research Design**

This research is a qualitative research with a case study approach. The study was conducted using interview methods and field observations. The main thing that will be examined is the comparison of the role of Human Resources with Digital Technology at 2 (two) Banks in Indonesia, namely PT Bank Negara Indonesia (Persero), Tbk. And PT Bank Bukopin, Tbk.

Observation is aimed at 2 (two) factors that cause the comparison of roles, namely internal factors of the Bank (such as cost efficiency, demand for service availability without down time, ease of access to data without obstacles, unlimited service coverage, and ease of reporting) and external factors (such as the regulation of the Central Bank related to the use of banking technology towards the digital version, technological developments, the emergence of financial technology / start-up fintech companies, market demand related to e-commerce transactions, and competition in the banking industry to provide the best service to customers).

#### **5.2. Sampling Technique**

In qualitative research there is no population and sample, but there are social situations which are divided into 3 (three) elements, namely place, actor, and activity. Determination of data sources in places, activities, and people to be interviewed is done by choosing according to the considerations and research objectives.

In the Operational Division of PT Bank Bukopin, Tbk. There is 1 (one) research informant with the position of Assistant Manager, while in the Operational Division of PT Bank Negara Indonesia (Persero), Tbk. There are 2 (two) research informants with the position of Assistant Manager. Comparison of roles between Human Resources and Digital Technology requires comparative data from the Information Technology Division of the two Banks, namely 1 (one) person from PT Bank Negara Indonesia (Persero), Tbk. With the position of Assistant Manager and 2 (two) people from PT Bank Bukopin, Tbk with the position of Manager so that the total number of respondents is 6 (six) people.

### **5.3. Data Collection Technique**

In order to collect data, the appropriate technique is by interview and observation (direct observation). Field data collection begins with conducting research observations about the factors studied. Interviews are conducted in private so that the information conveyed by informants is given in detail and in depth in accordance with the focus of the research theme.

### **5.4. Data Analysis Technique**

The data that has been obtained in this study were 61 total in by descriptive analysis method which aims to be able to provide a systematic, detailed, and comprehensive description of the comparison of the role of Human Resources with Information Technology in both Banks and the analysis process in order to answer the problems contained in the problem statement.

All data, both obtained through observations and interviews are compiled into one comprehensive data to be processed and analyzed qualitatively by paying attention to the facts in the field.

### **5.5. Research Variable**

In this study there are 2 (two) variables studied, namely: employees and digital technology devices. These two variables will be compared by looking at the data available in the field and seeing which ones are more dominant now. Employees (Human Resources) Banks are one of the elements in Banking that functions to carry out a role by using Banking applications in order to achieve the Bank's objectives, while technological devices are tools / programs / systems that are both software and hardware used by Banks in order to help achievement of the Bank's objectives.

These variables share a share in the success of Banking in achieving its goals, but as digital technology develops, activities carried out by humans can be simplified with digital technology and on the other hand the majority of customers in Indonesia still reject advance technology, so they prefer to dealing with humans.

## **6. Findings**

### **6.1. Comparative Data on the Number of Human Resources and Use of Digital Technology at PT Bank Negara Indonesia (Persero), Tbk. And PT Bank Bukopin, Tbk**

Based on the results of observations and interviews at PT Bank Negara Indonesia (Persero), Tbk. And PT Bank Bukopin, Tbk. There are several comparison factors that provide an overview of the impact of the development of digital technology in the banking world, as follows:

**Table 01.** Data on Comparative Factors at PT Bank Negara Indonesia (Persero), Tbk. And PT Bank Bukopin, Tbk.

No.	Comparative Factors*	PT Bank Negara Indonesia (Persero), Tbk.	PT Bank Bukopin, Tbk.
1	Number of Human Resources	27,209 people	5,656 people
2	Number of Accounts	27,600,000 accounts	1,300,000 accounts
3	Number of Digital Technology Users (e-Banking)	10,339,568 people	17,922 people
4	Number of ATM Machines	17,968 units	861 units
5	Amount of Expenses incurred for 1 (one) employee with Teller position in 1 (one) year	IDR 80,000,000	IDR 64,500,000
6	Amount of costs incurred for purchasing 1 (one) ATM machine	IDR 210,000,000 (brand Diebold)	IDR 210,000,000 (brand Diebold)
7	Number of Digital Technology Transactions (e-commerce via e-banking)	21,500,000 transactions	29,739 transactions
8	Government Regulation (External)	<ul style="list-style-type: none"> <li>• POJK No.19/POJK.03/2014 concerning Financial Services without Offices in the Context of Inclusive Finance,</li> <li>• PBI No.19/12/PBI/2017 concerning the Implementation of Financial Technology.</li> </ul>	<ul style="list-style-type: none"> <li>• POJK No.19/POJK.03/2014 concerning Financial Services without Offices in the Context of Inclusive Finance,</li> <li>• PBI No.19/12/PBI/2017 concerning the Implementation of Financial Technology.</li> </ul>

(\*) Source: Processed Data, 2017.

The data contained in the table above provides information that the comparison between the use of Human Resources and Digital Banking Technology, in this case is focused on ATM machines that replace the function of Teller in Branch Offices. The number of BNI employees spread throughout Indonesia reached 27,209 people with the composition of employees who have the Assistant and Assistant Manager positions (Teller and Customer Service positions) 62 totalling 10,790 people or 39.65% of the total number of employees in Indonesia. The data is compared to the total number of ATMs in Indonesia as many as 17,968 units with the number of users of e-banking products as many as 10,339,568 people or 37.46% of the total accounts registered with BNI, while at Bank Bukopin the total number of employees is 5,656 with the composition of employees with the level of Assistant and Assistant Manager positions (Teller and Customer Service positions) is 691 people or 12.21% of the total number of employees in Indonesia. The data is compared to the total number of ATMs of 861 units with the number of e-banking product users as many as 17,922 people or 1.38% of the total number of accounts registered with Bank Bukopin.

The next comparison is to calculate data costs incurred by BNI and Bank Bukopin in order to purchase ATMs with labor costs for Teller and Customer Service positions. In BNI, workers or employees with Teller and Customer Service positions receive a total annual income of IDR 80,000,000 while at Bank Bukopin, the total income per year for Teller and Customer Service is IDR 64,500,000. Comparative data is data on costs incurred to procure an ATM from both banks. Based on the interview results, information was obtained that the purchase price of an ATM with the Diebold brand was IDR 210,000,000 so the results of the comparison concluded that the purchase and use of ATM was considered more efficient and effective compared to the management of Human Resources. It can be seen from the calculations as follows:



**Table 02.** The Calculation of ATM Purchases vs. Human Resource Management at PT Bank Negara Indonesia (Persero), Tbk. And PT Bank Bukopin, Tbk.

ATM	Human Resources BNI	Human Resources Bank Bukopin
The purchase price of 1 ATM unit = IDR 10,000,000 with a usage period of 5 years, so that the total costs incurred by the two Banks are IDR 210,000,000 / 5 = IDR 45,000,000.	The cost of managing Human Resources per person per year = IDR 80,000,000	The cost of managing Human Resources per person per year = IDR 64,500,000
Maintenance and Service costs when damaged: IDR 15,000,000	Medical or outpatient fees per year = IDR 3,500,000	Medical or outpatient fees per year = IDR 3,000,000
<b>Total Cost = IDR 60.000.000</b>	<b>Total Cost = IDR 83.500.000</b>	<b>Total Cost = IDR 67.500.000</b>

Source: Processed Data, 2017.

If it is concluded, the use of ATM is considered more able to save costs compared to the management of Human Resources and an increase in Bank profits can be achieved optimally. Of the many differences in factors that affect the change in the role of Human Resources to Digital Banking Technology, there is one similarity, namely the enactment of government regulations (in this case the Central Bank and the Financial Services Authority) that regulate banking services without offices and financial technology. These provisions form the basis of the banking industry starting to shift from the use of Human Resources to Banking Digital Technology.

However, the increasing number of e-banking transactions for e-commerce is currently one of the dominating factors. This is indicated by the increasing number of e-commerce transactions via digital banking up to 93% at Bank Negara Indonesia (as many as 11,100,000 transactions in 2016, 21,500,000 transactions), while in Bank Bukopin transactions increased by 61% (in 2016 there were 18,200 transactions). In 2017 there were 29,739 transactions). The increase in the number of these transactions is the most dominant factor influencing the change in the role of Human Resources to Digital Technology because e-banking has provided easy transactions that can be done anywhere and anytime without having to meet face to face with Bank officers at the branch office.

## 6.2. Causing Factors that Changes the Role of Human Resources into Banking Digital Technology

Based on the results of observations and interviews in the two banks, several factors can be identified which cause Banking Human Resources to be replaced by digital technology, namely as follows:

**Table 03.** Data on Factors Causing Changes in the Role of Human Resources to Digital Technology in the Banking World

Internal factors	External Factors
1. Cost Efficiency,	1. Regulations issued by Bank Indonesia and the Financial Services Authority,
2. Coverage of digital technology networks to remote areas that cannot be reached by humans,	2. Increasing technological developments,
3. Willing to access digital technology networks without down time,	3. The rise of market demand related to e-commerce transactions is indicated by the increasing use of e-banking,

4. Types of banking products based on digital technology are increasingly diverse, making it easier for customers to carry out banking activities on a daily basis.	4. Banking competition in providing services that are easy, fast and pleasant to customers.
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Source: Processed Data, 2017.

The factors above mentioned are facts in the field that were successfully obtained by researchers. From these two factors, external factors in the form of increasing use of e-banking by customers are the dominant factors influencing changes in the role of Human Resources towards Digital Banking Technology. This was marked by an increase in the number of banking transactions, especially e-commerce at both Banks (PT Bank Negara Indonesia (Persero), Tbk. And PT Bank Bukopin, Tbk.), Which amounted to 21.5 million transactions at Bank Negara Indonesia and 24,626 transaction at Bank Bukopin.

Currently the banking industry is competing to be able to attract customers in using e-banking and aims to educate customers about the latest digital technology used. Digital banking products that have been launched have also been adapted to the needs of the community.

## 7. Conclusion

The development of digital technology especially in the banking industry has become increasingly sophisticated and advanced. The world community begins to comfortably conduct banking activities from anywhere and at any time without having to leave the house or go to the branch office. Access to technology also includes locations that are very difficult to reach by humans. The fees charged to customers are often excluded by the Bank. This marks how easily access technology is used by humans.

Along with these matters, the banking industry is experiencing increasingly fierce business competition. The banks compete to achieve their best performance with the achievement of profits that have been set at the beginning of each year. Many factors influence the achievement of the Bank's profits. In addition to the uniqueness and convenience of banking services, the banking industry in the world is currently also required to provide services that are fast, easy, and always available whenever customers need access.

Based on the previous discussion, it can be concluded that in the current era of banking digitalization there are several factors that influence changes in the role of humans in conducting banking activities. The Role of Human Resources can do many things before, as the development of digital technology slowly begins to shift.

One example that occurs is the transition of the role of Teller and Customer Service that performs several banking activities such as book printing services and cash deposits that have been replaced with Automatic Teller Machines (ATM) or passbook printers or Cash Deposit Machines (CDM) and are more sophisticated. Accessed online through each customer's smartphone in any format, anywhere and at any time.

In addition to technological developments, there are several factors that influence changes in the role of Human Resources in Banking towards digital technology, namely: cost efficiency, coverage or range of digital technology networks, availability of access or ease of access to digital technology without down time, and the variety of products that have tailored to the needs of the community at this time. Other factors originating from outside the banking industry are the existence of regulations from the government,

increased development of digital technology, rapid increase in the number of e-commerce transactions, and increasingly rapid banking competition.

The increase in the number of e-commerce transactions through e-banking is the most dominant factor influencing changes in the role of Human Resources in the Banking industry. Of the two banks that have been observed, both of them show data increasing above 50% of the number of transactions in the previous year.

Enhancement of digital banking technology should be balanced with the availability of services and adequate information security so that customer data and customer transaction data remain protected and provide convenience for customers in conducting transactions in Banking. In addition, the level of customer trust in the Bank can also increase and the Bank's goals can be achieved.

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