Aptisi Transactions on Technopreneurship (ATT)
Vol. 4 No. 2 July 2022

P-ISSN: 2655-8807
E-ISSN: 2656-8888

Indonesian Islamic Banking Fintech Model Strategy: ANP Method

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Author Notification
24 June 2022
Final Revised
17 July 2022
Published
20 July 2022

R. Donny M. Iskandar, Maryanti, T., Acep R. Jayaprawira, & Sari, S. N. (2022). Indonesian Islamic Banking Fintech Model Strategy: ANP Method. Aptisi Transactions on Technopreneurship (ATT), 4(2), 142–152.

DOI: https://doi.org/10.34306/att.v4i2.257

Abstract

The problem of developing the Islamic banking fintech model in Indonesia is divided into internal and external aspects. The priority source of issues with the fintech model in Indonesian Islamic banking is internal. This study aims to analyze the problems, solutions, and strategies of making a fintech model in Indonesian Islamic banking. This study uses non-parametric non-Bayesian qualitative methods for decision-making with a general framework without making assumptions with the Analytical Networking Process (ANP) approach. The researcher selected 11 informants consisting of 2 fintech practitioners, 3 Islamic banking practitioners, one industry 4.0 academic and Islamic sharia banking, one person from the Financial Services Authority, two people from the National Sharia Board, and one from Bank Indonesia. And one person from KNEKS. This study indicates that the problems and solutions for developing the fintech model in Indonesian Islamic banking are divided into internal and external aspects. The main priority of the problem is internal problems, namely the lack of Islamic banking Human Resources who understand IT and Islamic finance. The priority solution is an internal priority, namely a Reliable IT System. The primary importance of the development strategy for forming a fintech model for Islamic banking in Indonesia is the synergy of Islamic banks and Fintech to develop a fintech model for Islamic banks. The theoretical contribution and the results of this study are a novelty in the strategy of Islamic banks in implementing and developing Fintech in Islamic banking. Practical Implication, The managerial implications for Islamic banking practitioners in Indonesia are more focused on procuring a reliable IT system and improving the Human Resources of Islamic banks in mastering IT and Islamic finance. Distributed energy with Blockchain technology is secure, and there is no intervention from third parties or central authorities. It can make organizations using this technology more transparent, democratic, efficient, decentralized, and secure.

Keywords: *Model, Fintech, Islamic Banking, ANP.*

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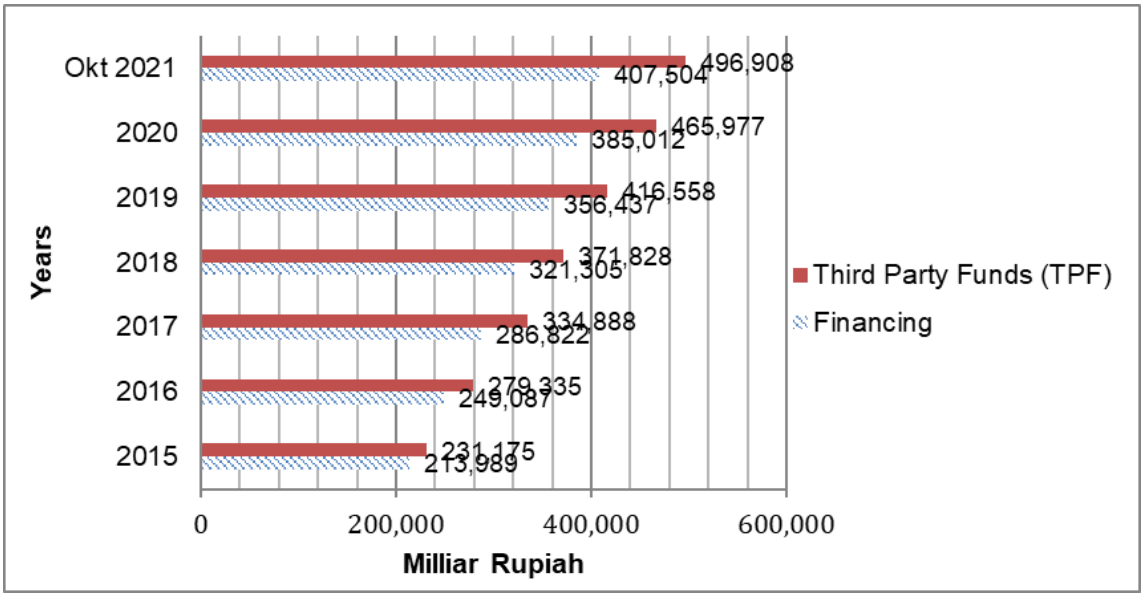
E-ISSN: 2656-8888

1. Introduction

The development of Islamic banking since the enactment of Law Number 21 of 2008 concerning Islamic Banking until 2021 has not experienced a significant effect. The story of a banking institution can be seen from the growth of fund collection in the form of Third Party Funds and the distribution of funds in financing.

Picture 1 shows the development of Third Party Funds owned by Islamic banking from 2015 – to October 2021. In 2016 Islamic banking Third Party Funds increased by 20.8%. This Third-Party Fund continues to grow. In 2017 it increased by 19.88% from 2016. The increase in Third Party Funds in 2017 was lower than the increase in 2016, and the difference was 0.95%. These third-party funds mean that the growth of Islamic banking Third Party Funds in Indonesia decreased by 0.95% in 2017. In 2018 the increase in Islamic banking Third Party Funds was 11.03%. The increase in 2018 was lower than in 2017, which was 8.85%. Although the value of Third Party Funds has increased, the increase has decreased. The growth of Islamic banking Third Party Funds in 2019 was 12.03%. In 2019 the rise in Third Party Funds was more significant than in 2018; the difference was 1% [1].



Picture 1. Development of TPF and Islamic Bank Financing (Period 2015-October 2021) (billion rupiahs)

In 2020, Islamic banking Third Party Funds increased by 11.8%. The growth of Third Party Funds decreased compared to 2019, which was 0.23% [2]. The development of Islamic banking Third Party Funds in 2021 using provisional data for October 2021 is 6.63%. This data continues to decline until 2021.

The rise of third-party funds over the past seven years has varied, according to data on Islamic banking third-party funds. Growth decreased from 2017 to 2018, then increased again in 2019 but is still tiny compared to the change in 2016 of 20.83%. However, from 2020 to October 2021, it again experienced a decline. While financing growth in 2016 increased by 16.4%, in 2017, it increased by 15.1%, in 2018, it increased by 12%, and in 2019 by 10.93% [3]. In 2020 there was an increase of 8.02%, and in 2021, an increase of 5.84%. It can be seen that although Islamic bank financing is growing, its growth is slowing or getting smaller from year to year.

Based on the above conditions, Islamic banking needs a strategy to increase Third Party Funds and Financing, which is expected to increase the assets and market share nationally. This strategy can be done by utilizing technological advances that are currently developing, called the 4.0 industrialized era.

The Islamic banking industry can develop in the era of the industrial revolution 4.0 by developing the fintech model. However, current research that has been done on Islamic banking in the period of the industrial revolution 4.0 has not been related to the strategy of producing a fintech model for Islamic banking [4]. Research in Indonesia is related to the opportunities and challenges of Islamic Fintech, opportunities and challenges of Islamic banking, implementation of Islamic Fintech, product analysis based on financial digitization in Islamic Banks, and consumer behavior towards technology-based products in Islamic banking [5].

Various strategies can be used to determine the fintech model for Islamic banking, but the method that can produce an overall design is the decision-making method. The decision-making process is called MCDM (Multi-criteria decision-making). MCDM is a technique for selecting the best option from a group of options based on predetermined criteria. Measures, regulations, and standards are typical criteria used in decision-making. [6]. One of the alternative decision-making techniques is the Analytical Networking Process (ANP). The ANP (Analytical Network Process) method develops the AHP (Analytical Hierarchy Process) method. ANP enables inner dependence—the interaction and feedback between components inside a cluster—and clusters. (external reliance). The ANP method can also optimize the formed strategy [7].

The description above is the basis for determining the formulation of the research problem. The situation formulation in this study consists of 3 (three): 1. What are the issues with the fintech model in Indonesian Islamic banking?; 2. What is the solution for the fintech model in Indonesian Islamic banking?; and 3. What is the strategy of the fintech model in Indonesian Islamic banking?. The objectives of this study are 1. To analyze the fintech model's problems in Indonesian Islamic banking; 2. Analyzed the Fintech model's solutions in Indonesian Islamic banking; and 3. To analyze the strategy of the fintech model in Indonesian Islamic banking. The implications of the results of this study are expected to be an additional reference for further researchers regarding the fintech model in Islamic banking with decision-making methods. The results of this study are also likely to become a new theory, especially in the strategy of technology-based product models in Islamic banking in the industrial era 4.0 with the decision-making method using the ANP technique. Thus, researchers hope to make a valuable contribution to the development of science, especially in Islamic economics.

2. Literature Review

2.1 Strategy Concept

According to Tjiptono (2018), a strategy is a comprehensive approach related to ideas, planning, execution, and activities for a certain period. Tjiptono (2018) also explains that a good design with work team coordination has a theme for identifying supporting factors based on implementing rational ideas, funding efficiency, and tactics to achieve goals effectively. Rachmat (2014) concludes that the strategy is based on an integrated and holistic analysis. After the process is prepared, all elements in the organization have a long-term perspective, and plans are formulated to realize the vision and mission of the corporation[8]. By Rangkuti (2018), the strategy is an opinion that is a comprehensive master plan and explains how the company will achieve all the goals set based on the mission set previously. Various strategic choices imply exemplary implementation and control measures in different functional units. Moreover, leveraging technology to change the competitive paradigm suggests combining computerization with marketing activities offers significant advantages [9].

Meanwhile, related to the decision-making method used is known as MCDM. Multi-Criteria Decision Making (MCDM) is a technique for selecting the best option from a group of options depending on predetermined criteria. When making decisions, measures are often utilized as measurements, regulations, or standards [10]. Based on the description above, the strategy used in this study to form a fintech model in Islamic banking is the Multi-Criteria Decision-Making (MCDM) strategy. The method used is the Analytic Networking Process (ANP) tool. ANP is one of the techniques used in the MCDM strategy.

2.2 Model Concept

Suprijono (2013) defines an individual or group of people who might try to act on the model using the model as an accurate depiction in the form of an actual process. Models are divided into several types. Cayaraya's (2014) research shows several kinds of models based on several expert opinions. The following table 1 shows the model classification.

Table 1. Development of TPF and Islamic Bank Financing (Period 2015-October 2021) (billion rupiahs)

Classification Type	**Model Criteria**
Mechanical	According to the iterative mechanism or phenomenon
Empiric	Using data input, an experiment, or both
Arbitary	Includes elements of a probabilistic model
Inevitable	A cause-and-effect analyzing analysis
Lump range	The dependent variable is not reliant on location in space
Parameter variable	The bound distributed is a function of the spatial position
Linear	Linear Superposition Principles apply
Non-linear	The principle of non-linear superposition does not apply to the dependent variable.
Continuous	Defined more sustainable space-time
Discrete	Defined for discrete values of time and/or space

The type of classification of the fintech model in this study is closer to the empirical model. The fintech model in Islamic banking in Indonesia is formulated based on data and suggestions or input from objective conditions in the field, namely the Islamic banking fintech industry in Indonesia.

2.3 Financial Technology (Fintech)

The term "fintech" refers to using digital technology to solve financial issues. Or an industry known as "Fintech" is made up of businesses that employ technology to make the economy and financial services more effective. The term "financial technology" (Fintech) is defined in Article 1 Number 1 of Bank Indonesia Regulation Number 19/12/PBI/2017, which addresses the Implementation of Financial Technology. A new product, service, technology, or business model is produced by financial technology or fintech. It may affect the stability of the currency, the financial system, and the payment system's effectiveness, scalability, security, and dependability [11].

Fintech, according to Fintech Weekly, is a line of business based on software to provide financial services. Financial technology companies are generally start-ups founded to disrupt the economic systems of companies and companies that rely less on software. According to PWC, Fintech is a dynamic segment at the intersection of the financial services and technology sectors where technology-focused start-ups and newcomers innovate in products and services currently provided by the traditional financial services industry. A financial services paradigm made possible by the advancement of information technology

innovation is known as fintech [12]. Fintech has changed several technology advancements with financial services like crowdfunding, mobile payments, and others.

Fintech itself has activities in financial services, such as payments, transfers, clearing, and settlements [13]. This activity is closely related to mobile payments (banks or non-bank financial institutions), electronic wallets (digital wallets), etc. These models aim to increase financial inclusion, ensure greater consumer access to payment services, and ensure the proper functioning of the payment system.

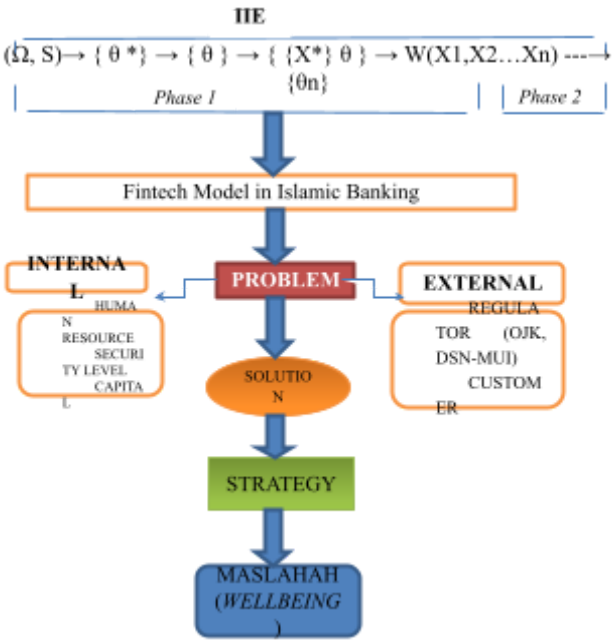
2.4 Framework of Thought

Because it is still in the research and development phase, there are many definitions of "Industry 4.0" [14]. Industry 4.0, according to German Chancellor Angela Merkel, is a total revolution of all facets of production that integrates digital technology, the internet, and traditional driving. In an industrial setting where everyone is continually linked and ready to share information, Schlechtendahl emphasizes the speed component of information availability.

Hiyanti et al. (2019) researched the challenges and opportunities of Islamic Fintech in Indonesia. The method used is descriptive analysis. The results of Hiyanti et al. (2019) found several challenges and opportunities for developing sharia fintech in Indonesia [15]. The challenges faced by the community in developing sharia fintech, in the form: 1. Licensing and minimum capital for the establishment of sharia fintech; 2. The lack of knowledge of the village community to operate sharia fintech; 3. Conventional fintech cases and phenomena make people think that sharia fintech is the same as traditional; 4—lack of Human Resources (HR) who control transaction contracts based on sharia principles; and 5. Competition in future technology is getting faster.

According to Hiyanti et al. (2019), the opportunities for the development of sharia fintech in Indonesia are 1. The Financial Services Authority (OJK) provides an opportunity for sharia Fintech actors to register their Fintech at OJK officially; 2. Sharia fintech provides technological convenience for investment and donation activities; 3. Most of the Indonesian population embraces Islam, which currently reaches 207 million Muslims in Indonesia, and 4—opening opportunities for the entry of technological developments in Indonesia. Hiyanti et al. (2019) show that challenges are more than opportunities.

Based on the description above, the description of the framework of this research can be seen in Picture 2.



Picture 2. Thinking Framework

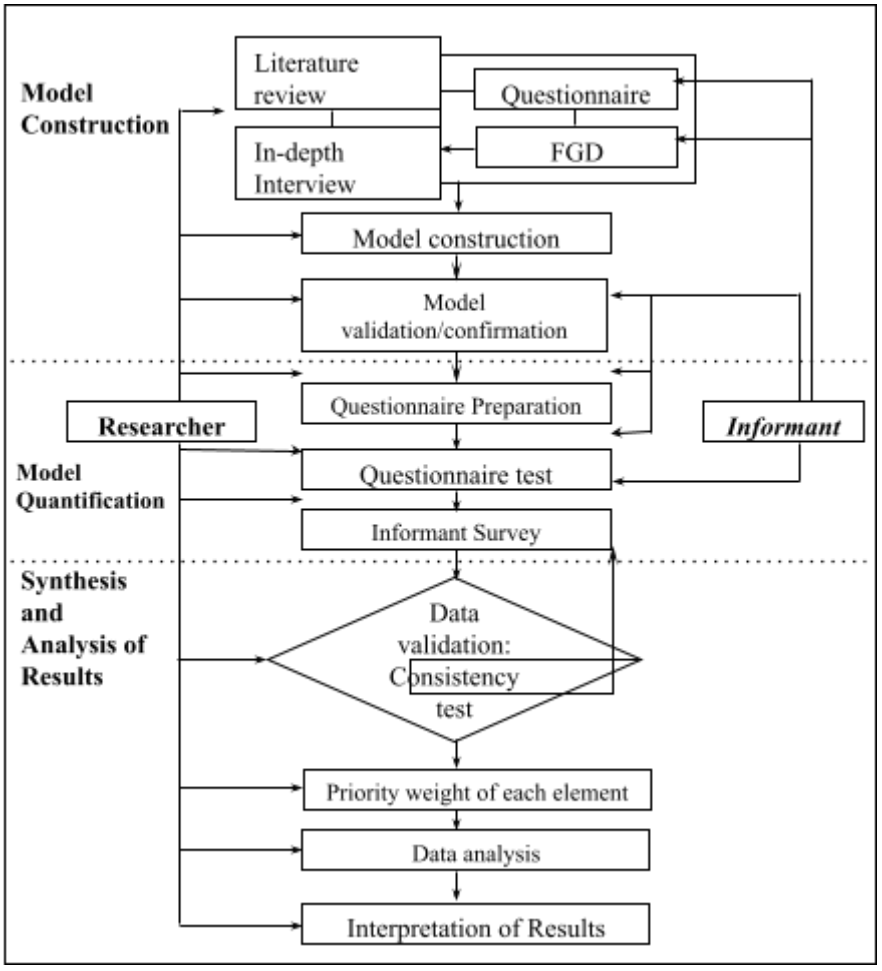
3. Methodology

This research is categorized as a non-parametric non-Bayesian qualitative approach to decision-making with a general framework without making assumptions. This approach is called the Analytic Network Process.

A novel method of decision-making called ANP offers a broad framework for handling choices without making assumptions about the freedom of system components and the independence of higher-level elements from lower-level parts. You can use the selection of ANP to analyze phenomena with a weak theory.

The Analytic Network Process (ANP) is a general theory of relative measurement used to derive the composite priority ratio from the individual ratio scale, reflecting the comparable measure of the influence of interacting elements for control criteria. ANP is a mathematical theory that systematically allows a person to do a dependence and feedback system that can capture and combine tangible and intangible factors.

The stages passed in this research can be seen in Picture 3 below.



Picture 3. ANP study chart for identifying the top issues, issues, solutions, and fintech model in Indonesian Islamic banking.

That will carry out the priority problems of developing Islamic banking in the industrial era 4.0, along with solutions and strategies using ANP, three stages of research. First, Model Construction/decomposition. The construction of the ANP model is based on a literature review in theory, literature, and empirical and provides questions to experts, practitioners, and regulators through in-depth interviews to examine more deeply to obtain and understand the real problem [16]. The decomposition function is to structure the situation's complexity in the ANP framework. The second is the Quantification Model. The model quantification stage

uses questions in the ANP questionnaire in pairwise comparisons between elements in the cluster to determine which of the two has the more significant influence [17]. To calculate the size of the discrepancy, measurements are conducted on a scale from 1 to 9. (seen from one side). The data from the assessment results are then collected and input through the Super Decision software.

Table 2. Comparison table of verbal scale and numerical scale

Verbal Rating Scale	Numerical Scale
It has far more sway	9
	8
Much Greater Influence	7
	6
Superior Influence	5
	4
somewhat greater impact	3
	2
Equally significant an effect	1

|

For instance, the two perspectives of "Regulator" and "Islamic Bank Management" address the issue of establishing Indonesian Islamic banking fintech in the industrial era 4.0. Which of the two components is more important (more dominating), and how much of a difference exists between them [18].

In this study, researchers selected 11 informants consisting of 2 fintech practitioners, 3 Islamic banking practitioners, one academician, one person from the Financial Services Authority, two people from the National Sharia Board, one from Bank Indonesia, and one person from KNEKS[19]. To determine which of the two elements in the cluster is more influential (more dominant) and how much of a difference there is from one side, the ANP questionnaire asks for pairwise comparisons between the elements. The verbal evaluation is translated onto the standard numerical scale of 1–9. To guarantee the consistency of the provided responses, the researcher must accompany the informant while completing the questionnaire [20]. The ANP questionnaire has a large number of questions. So there might be much variance due to non-technical variables [21].

4. Research Results

4.1 Overview of the Research Process

This study uses the ANP (Analytic Network Process) research model in shaping the fintech model strategy in Islamic banking in Indonesia. The strategy model formed based on the ANP research model is a model built and developed based on the informants' responses. The researcher learned the informant's reaction through the findings in interviews. The formation of the ANP model is based not only on interviews with informants but also on a literature study conducted by researchers.

The informants who became the data source in this study consisted of 11 (eleven) people. The eleven informants have backgrounds from industry 4.0 practitioners, Islamic banking practitioners, industry 4.0 academics and Islamic banking, regulators of the Financial Services Authority, the National Sharia Board, Bank Indonesia, and KNEKS. The names and initials of this research informant are as follows:

Table 3. List of Research Informants

No.	Name	Background
1	Adrian A Gunadi, MBA **(AAG)**	Founder & CEO of Investree, Fintech Practitioner, Sharia Banking Practitioner (Citibank, Standard Chartered Bank Dubai, Head of UUS Permata Syariah, Director of Bank Muamalat)
2	Ronald Yusuf Wijaya **(RYW)**	Chairman of AFSI (Indonesian Sharia Fintech Association), Fintech Practitioner (Co-Founder & CEO of Ethics Fintech)
3	Dr. Herbudi S Tomo **(HST)**	Executive Director of ASBISINDO (Indonesian Sharia Banking Association), Islamic Finance and Banking Practitioner (President Director of Al Ijarah Multifinance, Director of Bank Muamalat)
4	Affiaty Sofia Martini **(ASM)**	Director. Risk Mgt Bank Jabar Syariah, Islamic banking practitioner (Head of Regional Office of Bank Niaga & Bank Muamalat)
5	Wijayanto Wongsodipuro, MM **(WJT)**	Group Head Digital Banking Bank Syariah Indonesia (BSI), Electronic Banking Group Head BRI Syariah, Electronic Banking Division Bank BNI.
6	Fitria Irmi Triswati, Master of Art (MA) Economics **(FIT)**	Director of DKSP (Payment System Policy Department) - Bank Indonesia
7	Triyono Gani, MBA **(TG)**	Executive Director of OJK's Digital Finance Innovation Group

5. Discussion of the Results

Conceptual aspects that hinder the development of Islamic banking fintech models in Indonesia are tested empirically and comprehensively. The test results indicate that internal factors are more prioritized as the cause of the problem, namely 0.5963 or 59.63% from external factors 0.3369 or 33.69%. The dimensions of the internal factors that are prioritized in order from high to low are the aspect of minimal human resources (0.2394/223.94%), security risk (0.2105/21.05%), sharia compliance (0.1862/18.62%), and significant investment (0.1689/16.89%). The dimensions of external factors that prioritize issues are minimal fintech literacy (0.3204/32.04%), minimal infrastructure (0.3051/30.51%), and minimal fintech regulation (0.2520/25.20%).

This study indicates that the elements of the Islamic banking fintech model in Indonesia, both internal and external factors, must be a severe concern to practitioners and regulators of Islamic banking. You can also see that Islamic banking's internal factors and human resources are the main priority, so they need serious attention. Thus, it can be ascertained that the development of the fintech model in Islamic banking in Indonesia begins with changes or updates to the capabilities of Islamic Bank Human Resources, especially in the IT field.

This research concludes that the primary problem variable is an internal problem. Internal problems consisting of a lack of human resources, security risks, significant investments, and sharia compliance are top priorities in developing Indonesia's Islamic banking fintech model. These results provide theoretical implications that become a novelty in this study, namely the development of banking fintech theory.

6. Conclusion

The problem of developing the Islamic banking fintech model in Indonesia is divided into internal and external aspects. The priority source of issues with the fintech model in Indonesian Islamic banking is internal. The lack of Human Resources who master IT and HR in Islamic Finance for the development of Fintech in Islamic banking is the priority of internal problems that become a source of obstacles to the development of the fintech model in Indonesian Islamic banking.

Solutions to overcome the problem of developing Islamic banking fintech models in Indonesia are divided into internal and external aspects. The priority of the solution is from the internal solution. The internal solution priority is a reliable IT System solution. The answer to the lack of Islamic finance and IT human resources is the need for a reliable IT system. Human Resources are formed so that it is easy to learn about IT for Islamic financial transactions.

The strategy for developing the Islamic banking fintech model in Indonesia is divided into four strategies, namely: the synergism strategy of Islamic banks and Fintech, the IT development strategy of Islamic banks, the strategy for developing IT-based retail and MSME funding products, and the IT-based retail and for developing MSME financing product. The synthesis results show that the strategic priority of the Islamic banking fintech model in Indonesia is the synergism of Islamic Banks & Fintech. This strategy is in the form of collaboration between Islamic Bank institutions and existing fintech companies to overcome data security risks and develop fintech models in Islamic banking. The identification of the strategy for developing the Islamic banking fintech model in this study is a strategy that Islamic bank managers can directly implement. Thus, the results of this study are a novelty in the process of Islamic banks in implementing and developing Fintech in Islamic banking.Future research can be applied to Fintech development in other banks, not only Islamic ones.

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