Paper 61

The Robotic Process Automation (RPA) and Its Effect on Customer Due Diligence (CDD) Process in A Financial Technology Startup in Indonesia

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Abstract - **This paper aims to understand how the Robotic Process Automation (RPA) works and its impact on the online customer onboarding or Customer Due Diligence process in a financial technology start-up. RPA is a popular approach taken by Indonesian-based financial technology companies to reduce the dependency to human agents. The paper uses both quantitative and qualitative methodologies to understand the context, create the time function map, analyze the impact comparison of Capgemini indicators of RPA success by using the data from the case company related to online CDD process, and gain insight for the next improvement. Results indicate that the RPA implementation in the online CDD process of the case company can improve the processing time, SLA achievement level, customer satisfaction, and the compliance. However, it causes the cost increase and quality of work data being compromised. This study provides many benefits for financial companies to learn on how to scale their onboarding fast as long as the company is willing to comprehensively assess the cost and quality of the automation technology before using it.**

Keywords - **Business Process Reengineering; Customer Due Diligence (CDD); Financial Technology; Robotic Process Automation (RPA);**

I. INTRODUCTION

In November 2021, Indonesia had 2,310 start-ups that made it became the fourth country with the biggest number of start-ups after the United States with 69,664 start-ups, India with 11,995 start-ups, and Canada with 3,162 start-ups (Startup Ranking, 2021). As the start-up is designed to grow fast, most of them are disrupting existing businesses through technology (Graham, 2012). One of the start-up sectors that received enormous support from the Indonesian government is financial technology because it helps Indonesia to reach the vision of building a cashless society and financial inclusion (Bank Indonesia, 2021).

To onboard a customer, the financial technology company must enable a customer due diligence (CDD) process through their platform or usually called as Online CDD process. Even if the data has been collected from the online channel, in some financial technology companies, including the case company, there is still human agents that will process each of the collected data and give the approval or rejection decision. The dependency to human agents makes this process is costly and very hard to scale. Thus, many operational challenges are unavoidable when there's a sudden increase in the traffic because the verification process cannot happen within the service level agreement (SLA) and the cost increases.

One of the feasible solutions to the operational challenge due to increase in traffic is the technology that can remove the repetitive and manual human task. Specifically, robotic process automation (RPA) is one of the technology options. Tripathi mentioned that RPA enables software robots to translate, interpret, respond, and communicate with other systems which will automate the business process (Tripathi, 2018). The RPA disrupts how things are "usually done" in the company. It gives a new perspective on how to do things more efficiently and effectively (Tripathi, 2018). "An RPA tool operates by mapping a process in the RPA tool language for the software robot to follow, with runtime allocated to execute the script by a control dashboard"(Tornbohm, 2017). Hence, RPA tools aim to reduce the burden of repetitive and simple tasks that are usually done by human (Aguirre and Rodriguez, 2017). By having RPA, companies can reduce or even remove some work that will reduce the load of the workers even to cut down the cost of workers in that specific work (Tripathi, 2018). However, it may work to a process and may not work for another process so that in this thesis we are going to assess its implementation and benefit to the company in both the operational and risk side.

Recent studies have shown that RPA gives benefits in various business processes and even selection process criteria has been suggested by some authors. Anagnoste (2019) confirms that RPA is able to solve company's challenges to achieve consistent results in the back office like finance, operations, and human resources. Mononen (2020) enriched the RPA study, not only it gave positive impact on efficiency of the resourcing but also to the more mindful work life that affects the employee engagement positively. Jovanovic (2020) also found that there were some benefits of performing robotic process automation, such as cost reduction, efficiency, and rework task reduction (Jovanovic et al., 2018). This research differentiates itself by bringing the online CDD process in financial technology companies, especially in Indonesia. Thus, the objective of current study was to analyse how the RPA works in the online CDD process, evaluate the RPA success measure comparison for the online CDD process

before and after RPA by using Capgemini indicators, and identify the next business process improvement in online CDD process.

II. METHODOLOGY

In order to achieve its objective, both qualitative and quantitative methodology were used in this research. In-depth interviews were conducted for collecting data to do the qualitative analysis. While the content analysis was used to understand current business process information, the role of RPA in the online CDD process, and the future business process improvement. The in-depth interviews will be conducted with the involved actors, such as product manager, operation manager, fraud manager, and compliance manager, while the content analysis will be performed for internal documents, such as SOP (Standard Operational Procedure), PRD (Product Requirement Document), and technical design. The quantitative method will be done to measure the impact of RPA implementation in the online CDD as well as getting insight for future business improvement.

The research is conducted online through Google Meet or Zoom for the interview, while the documents are received through email. The research period is May 2021 to February 2022. The historical data that will be used is from 1 May to 30 September 2021 for the pre-RPA implementation and 16 October 2021 to 15 March 2022 for the post RPA implementation.

In this research, several methods, such as exploratory, time function map, and quantitative will be used. The exploratory method will be used to explain the background of the business process automation by using RPA in the online CDD process. The time function map method will explain easily then pre and post implementation of RPA in the online CDD process. The quantitative method is used to calculate the impact of the RPA in the online CDD process.

The time function map or process mapping methodology is selected to show the before and after of business process improvement because it is easier to understand in explaining the process and the time required for each process (Heizer, 2020). The time function map is a flowchart with time information added in the horizontal axis (Heizer, 2020). The flowchart is a schematic or drawing of that's used to analyze the movement of products, materials, or people (Heizer, 2020).

III. RESULTS

The case company name was PT Payfazz Teknologi Nusantara with the brand name "Payfazz". It is a well-known financial technology company that provide easiness for its agents to provide "pay utility" and other financial services through an android-based application. Payfazz vision is to provide digital financial service to everyone, without an exception. While Payfazz mission is to accelerate the digital financial access in the emerging market. In 2021, Payfazz has around 250,000 active agents in Indonesia (Indotelko, 2021). Payfazz conducted online CDD process for its agent to upgrade an account from basic to verified user.

Before enabling RPA, the online CDD process verification happens manually where the customer information was screened by human agents. Post RPA, some technologies were placed to replace human agents, such as blurriness, darkness, and KTP detection check, liveness detection and auto-capture selfie, passive liveness check, OCR (Optical Character Recognition), Dukcapil check, and AML (Anti-Money Laundering) check. As the result, around 70% of the online CDD process went through automation – without human intervention.

The RPA implementation in the online CDD process brings positive impacts to the case company, as can be seen in table 1:

Table 1 - THE CAPGEMINI SUCCESS MEASURE COMPARISON BEFORE AND AFTER RPA IMPLEMENTATION

Indicator	Value	Description
The speed of process	**-99%**	from on average 156 hours to be <5 minutes
The quality of work data	**-2.7%**	Defect rate from 1.68% to 4.38%.
SLA achievement level	**+55%**	within SLA ticket increase from 44% to 99%.
Customer Satisfaction (Calc by using incoming complaint)	**-38.7%**	from 1,336 to 806
Cost	full ops capacity: **+45%**	from IDR1,136 to IDR1,650
	normal capacity: **-14%**	from IDR1,908 to IDR 1,650
Percentage in standardization	no quantitative measurement	Ops manager mentioned that it has massive standardization impact, bad or good.
Compliance and risk	no quantitative measurement	Compliance and fraud team mentioned that it reduces the identity theft and improve compliance.
Headcount	**-41.17%**	from 17 to 10 manpower

Based on the interview with KYC lead and the impact comparison above, the quality issue in work data was because of the selfie image filtration is not well-implemented. While the increase in cost is mainly because

there are some additional checks which were not part of the manual process.

IV. DISCUSSION

As displayed in table 1, the RPA implementation in online CDD process gave positive impact towards the case company in term of speed of process, SLA achievement level, customer satisfaction, reduce fraud and improve compliance, and reduce head counts. The speed of process rose by around 99% from on average 156 hours to be <5 minutes. The SLA achievement level also improved by 55%, the within SLA ticket increase from 44% to 99%. The customer satisfaction improvement was shown by the reduction in complaint ticket by 38.7%, from 2.7&1,336 to 806. The reduction in fraud and compliance improvement were shown by reduction in identity theft to be zero. Enabling anti-money laundering screening and Dukcapil check are also from zero to one feature which weren't enabled before RPA. Last of all, it has been successfully reducing the head counts for online CDD process.

Some negative impacts were also identified due to RPA, such as cost increase and increase in defect rate. Cost increase was unavoidable because enabling the technology through third party will cost significant amount, if operation team was at full capacity, then the cost increase is around 45%, from IDR1,136/application to be IDR1,650/application. The defect rate was increasing by 2.7% in the initial implementation, from 1.68% to 4.38%. While there hasn't been a measurement on "increasing standardization" impact.

In order to improve the negative impacts of RPA, there is a need to improve the image quality input to reduce defect rate and focus on reducing the cost and/or headcounts. On increasing image quality, darkness check, blurriness check, and image ratio check can be added as an input validation so that only good quality ID card and selfie that can go through the RPA. While to reduce the cost, the case company can negotiate to current vendor or find a new vendor as well as shifting as many as possible human agents once unused.

V. CONCLUSION

This paper aims to understand how the Robotic Process Automation (RPA) works and its impact on the online customer onboarding or known as Customer Due Diligence (CDD) process in a financial technology start-up by using Capgemini success measures of RPA, such as speed of process, improving the quality of work data, SLA achievement level, employee satisfaction, cost reduction, reducing risk and improving compliance, increasing the percentage of standardization, and reduction in head count of the online CDD process during the period May 2021 to February 2022. All the data that has been collected were processed to answer the research questions, such as the role and impact of RPA in the online CDD process as well as the suggestion for the future online CDD process improvement.

Though this study, RPA in online CDD at case company has successfully implemented some technology solution (KTP, selfie, and compliance-related check) to automate around 70% of the human agent works. However, brings both positive and negative to the Capgemini indicator of RPA success measure. The speed of process rose by around 99% from on average 156 hours to be <5 minutes. The SLA achievement level also improved by 55%, the within SLA ticket increase from 44% to 99%. The customer satisfaction improvement was shown by the reduction in complaint ticket by 38.7%, from 1,336 to 806. The reduction in fraud and compliance improvement were shown by reduction in identity theft to be zero. Enabling anti-money laundering screening and Dukcapil check are also also from zero to one feature which weren't enabled before RPA. It has been successfully reducing the head counts for online CDD process. However, the cost increase is unavoidable because enabling the technology through third party will cost significant amount, if operation team was at full capacity, then the cost increase is around 45%, from IDR1,136/application to be IDR1,650/application. The defect rate also increases by 2.7%, from 1.68% to 4.38%. While there hasn't been a measurement on "increasing standardization" impact.

To improve the effectiveness of RPA in online CDD process, the case company can reduce the defect rate by adding some validations, such as darkness check, blurriness check, and image ratio check as well as finding out the best price vendor and shift unnecessary human agents. Thus, image quality input can be increased to reduce the defect rate and both human and technology cost will be reduced.

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