

Using COBIT 5 for Risk Management Assessment E-Wallet Information Technology in Indonesia

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Abstract: - In this digital era, internet users in the world and in Indonesia are growing very rapidly from time to time. This means that consumer needs in terms of making payments have also undergone a change towards a more modern payment, namely cashless payment. In Indonesia itself has developed an online-based payment system using electronic money or the usual e-money E-wallet (electronic wallet) is a form of Fintech (Finance Technology) that utilizes the internet as an alternative payment method. Electronic wallets developed along with the arrival of e-commerce in Indonesia such as Shopee, Tokopedia, and Bukalapak. Payment instruments for products/services that consumers want to buy can be done anywhere and anytime using a smart phone, only by top-up balance from an electronic wallet. Cobit as a quality framework can be used to measure an information system. Cobit 5, the latest framework from Cobit, can be used to assess the quality of information systems from many aspects of general management and focus on security, IT assurance, and IT risk. The writing of this paper uses a circlet scale calculation with to complete a questionnaire that requires them to indicate their level of agreement with a series of questions provided by the researcher. The benefit of writing this paper is that it can provide benefits as reading material for lecturers and students and increase knowledge for us as authors of this study about information about E-wallet Applications. From the results of research that has been done, it can be seen that customers are very satisfied with the services and features contained in the E-wallet application.

Key Words: — *E-wallet, Cobit, Electronics, IT, Online.*

I. INTRODUCTION

In this digital era, internet users in the world and in Indonesia are growing very rapidly from time to time. This means that consumer needs in terms of making payments have also undergone a change towards a more modern payment, namely cashless payment.

In Indonesia itself has developed an online-based payment system using electronic money or the usual e-money. Since August 14, 2014, Bank Indonesia has planned the National Non-Cash Movement (GNNT)[1]. This is the impact of the rapid development of information technology globally.

As a result, private and state banks are competing in launching their new products [2].

Bank BRI, for example, issued e-money named Brizzi, Bank BNI with its product TapCash, Bank Mandiri with its product Mandirie-money, and Flash & Sakuku from BCA, even telecommunication providers also took part in issuing products such as Telkomsel with its flagship product T –Cash [1].

E-wallet (electronic wallet) is a form of Fintech (Finance Technology) that utilizes the internet as an alternative payment method. E-wallet emerged by offering more convenience and with the latest technology that can be accessed by all people. Indonesia currently has many modern young people, most of whom are teenagers who are familiar with technology. Internet access has been enjoyed by almost all groups throughout Indonesia. This is a very promising opportunity in the industrial era 4.0 for the banking and e-commerce industry in developing their business [1].

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e-wallet commonly known as E-Wallet, developed along with the emergence of e-commerce in Indonesia such as Shopee, Tokopedia, and Bukalapak. Payment instruments for products/services that consumers want to buy can be done anywhere and anytime using a smart phone, only by top-up balance from an electronic wallet [citation 2]. Every e-commerce has a place to top up balance, such as ShoppePay, Gopay. Banks have also opened their electronic wallet platforms and are collaborating with certain e-commerce to be able to make payment transactions without discounted fees, such as DANA (Tix ID Payment for Cinema Tickets) in collaboration with Bank BCA, Mandiri[3].

As stated in Bank Indonesia Regulation Number: 11/12/PBI/2009 concerning Electronic Money which has now been updated to PBI Number: 18/17/PBI/2016, there are 11 banks entered and 21 technology and communication companies that are included in the list of providers electronic money[3]. PT. Visionet Internasional is the company that makes OVO. This wallet was established in March 2017 and authorized by Bank Indonesia with letter no. 19/661/DKSP/Srt/B on 7 August 2017. OVO e-wallet can be downloaded for free on Google Play Store and App Store[3].

Cobit as a quality framework can be used to measure an information system. Cobit 5, the latest framework from Cobit, can be used to assess the quality of information systems from many aspects of general management and focus on security, IT assurance, and IT risk (Isaca, 2012). The risks faced by the E Marketplace can be evaluated using the Cobit 5 framework which focuses on risk management[4].

Cobit 5 is used to evaluate information technology risk management in the form of the SAP system that the company has used in managing its business system automation (Setyaningrum, 2018)[5]. The use of the part of Cobit 5 that has been made among those that focus on system security is the COBIT 5 Information Security Framework, while what has been made is the measurement of the effectiveness of using the framework to reduce Cyber attacks in Supply Chain (SCMS) and ERP systems (Wolden, 2015)[6].

From our research, the use of Cobit 5 can be used to measure the risk of the E-Wallet system in knowing the risks that will be faced by the company. This study focuses on measuring the risk of the E-Wallet system using APO12. APO12 has processes in it in the form of: collecting data, analyzing risk, maintaining a risk profile, articulating risks, determining a portfolio of risk management actions and responding to risks [citation 4].

II. RESEARCH METHODS

2.1 Method of collecting data

Literature review:

In the literature study, we collect data by conducting a search study of books, literatures, notes, and files that are related to the problem we are going to solve.

Interview:

In this technique, researchers collect data or information directly from sources or E-Wallet users in North Penajam Paser by asking several questions. This interview aims to obtain information about the benefits of Information Systems on E-Wallet. This interview method is in accordance with the guidelines of the COBIT 5 Framework.

Questionnaire:

At the questionnaire stage, we make a list of questions that must be filled out or answered by the respondent and the people around who will be asked for information. A questionnaire was conducted on 10 people regarding the process capability level, which aims to determine the level of capability in the risk management process in E-Wallet information technology. Respondents on the capability level measurement questionnaire are the parties contained in the RACI Chart structure of the APO12 (Manage Risk) process.

2.2 Analysis Method

Lingkert Scale Calculation:

The research scale we use to measure attitudes and opinions. With this Likert scale, we ask that the respondents are asked to complete a data questionnaire that requires them to answer several questions. To calculate the total score, each respondent is by adding up the item scores obtained from the respondents. In equation (1) is the formula that we use in calculating the Likert scale: The formula for the average percentage.

- A. Process Capability Level Analysis This capability level analysis is based on the results of a questionnaire on information technology governance related to risk management in E-Wallet, which refers to COBIT 5 and uses APO12 (Manage Risk) Subdomain. Respondents required for this analysis are in accordance with on the RACI Chart COBIT 5 using the APO12 sub domain. The following are the results of the calculations from the questionnaires that we have conducted:

1. Each level has multiple process attributes (PA). in each attribute process there are several criteria that must be met according to the standard for fulfilling the attribute process in COBIT 5.
2. Each criterion has a range of NPLF values. This value represents the level of achievement that has been achieved from each of the required criteria.
3. Each value range has an assessment weight.
4. From each criterion then grouped based on the answers per question and per criterion range achieved.
5. Adding the number of respondents according to the range of values then multiplied by the weight.
6. The result of the sum will be divided by the number of assessment respondents and then multiplied by 100%.
7. From these results will be obtained final results which can then be categorized according to the rules, namely:

- N (Not Achieved, range 0% to 15%), there is no or little evidence of an attribute achievement in the process. The range of values obtained in this category ranges from 0% to 15%.
- P (Partially Achieved, range >15% to 50%), evidence is obtained regarding the approach and achievement of the process attributes. The range of values obtained in this category ranges from >15% to 50%.
- L (Largely Achieved, range >50% to 85%), there is evidence of a systematic approach and significant achievement of the process, although there are still some insignificant weaknesses. The range of scores achieved in this category ranges from >50% to 85%.
- (Fully Achieved, range >85% to 100%), there is evidence of a systematic and complete approach and full achievement of the attributes of the process and no weaknesses related to the attributes of the process. The range of scores achieved in this category ranges from >85% to 100%.

Gap Analysis is used to find the difference between the capability level obtained and the expected level.

By identifying the improvements that will be needed to increase the level of capability using the COBIT 5 framework as in equation (3).

GAP = Maturity value to be achieved – Current maturity value (3)

III. RESULTS AND DISCUSSION

Processing is done first using Cobit 5 governance. The processing starts with:

Determination of Risk Perspective:

The E-Wallet system has been running so that the risks faced have occurred. To solve the problem and control it, Perfective Risk Management is used.

Determining Cobit Risk process:

Table.1. Identification of risk processes

No	Process Identification
1	EDM03 Ensure Risk Optimization
2	APO 12 Management risk

Determination of Risk Management process:

Table 2. Risk Management process

NO	Risk Management process
1	Evaluate Risk Management
2	Direct Risk Management
3	Monitor Risk Management
4	Collect Data
5	Risk Analysis
6	Maintain A Risk Profile
7	Define a Risk Management Portfolio Action
8	Articulate Risk
9	Respond to Risk

Determination of Capability level:

Capability level is determined based on the results of questionnaire processing that has been distributed to E-Wallet users. The processing results can be seen in Table 3.

Table.3. Risk Management process assessment results

NO	Risk Management process	perception	Expectations
1	Evaluate Risk Management	3.23	3.68
2	Direct Risk Management	3.49	3.60
3	Monitor Risk Management	3.79	3.54
4	Collect Data	3.88	3.68
5	Risk Analysis	4.08	3.66
6	Maintain A Risk Profile	3.59	3.53
7	Define a Risk Management Portfolio Action	3.86	3.66
8	Articulate Risk	3.89	3.34
9	Respond to Risk	3.86	3.43

Based on the results of the assessment in the table above, a Capability level assessment is then made. The form can be seen in table 4.

Table.4. Capability level results

Process Name	Capability level results				
	1	2	3	4	5
EDM03 Ensure Risk Optimization				3	
APO 12 Manage risk			2	4	

Based on the table above, the result value of the Capability level in the EDM process has 3 subprocesses that have a value of 4. While in APO there are 4 subprocesses that have a Capability level 4 result value and only 2 have a 3 value on the Capability level result.

Based on the results of data processing in table 4, several discussions were obtained including:

- EDM 03 has a value of 4 in all its sub-processes. This means that the risks in the system can be predicted in handling in many ways. And the risk conditions can be measured by the company.

- APO 12 with Capability level 4. There are 4 activities that have the same value, namely data collection, risk analysis, risk profile saving, and risk articulation. This means that the four processes can be handled and measured properly by the company with different handling at each site according to user needs.
- APO 12 with Capability level 3. There are two subprocesses that have a value of 3, namely defining a portfolio of risk management actions and responding to risks. Both subprocesses have standardized processes that must be carried out by all parts of the organization but the handling is not perfect.

IV. CONCLUSIONS AND SUGGESTIONS

Conclusion:

The conclusions that can be drawn from the results of the above processing are:

- Risk management on E-Wallet to reduce existing risks has been carried out.
- The risk management process for recording risk handling and response to risk is in the standardization process of handling, not yet on a continuous handling process.

Suggestion:

Based on the research that we have done, there are suggestions that need to be considered on: E-Walletto improve IT governance capabilities. By implementing the recommendations for improvement within the next 1 to 2 years gradually so that the level of information technology risk management process capability can reach a better level.

The proposed system produces ranking decisions that were relatively highly consistent with those of the human experts. This system will enable a more effective way to short list submitted candidate CVs from a large number of applicants providing a consistent and fair CV ranking policy. The presented system automates the processes of requirements specification and applicant's ranking. This system can be used in many business sectors that may require expert candidates and also reduce workload of the human resource department.

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