OPEN ACCESS
Indo-JC Indonesia Journal of Computing
ISSN 2460-9056
socj.telkomuniversity.ac.id/indojc

Ind. Journal on Computing
Vol. 6, Issue. 3, December 2021. pp. 63-74
doi:10.34818/indojc.2021.6.3.613

IT Asset Assessment Using Quantitative Risk Analysis (QRA) Method at XYZ Cafe

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Abstract

Many companies are starting to invest in information technology (IT) assets to improve their business performance and services in this era. This includes modern cafes, which are becoming a promising business trend, especially if they have branches in various places. As with XYZ Cafe, IT Assets play an essential role in running the business. This research has succeeded in utilizing the Quantitative Risk Analysis (QRA) Method to perform calculations and tabulations for any potential risks. The results show the increase in the value of losses by 371.5% of the issued IT Asset investment capital, or 477,388,063 Rupiah. In detail, through Across Asset Analysis, Across Asset Value is at the top of the rank, namely Mini PC, with a loss value of 127,440,000 Rupiah. Through Across Risk Analysis, the Accidental Errors is in the first rank with a loss value of 184,038,000 Rupiah. This result implies that stakeholders can develop and plan mitigation actions to reduce potential losses for the company. Mitigation actions can be in the form of regulations, standard operating procedures (SOP), proposed monitoring applications, or strategic plan at top-level management so every threat and risk can be controlled and managed.

Keywords: IT Asset, Quantitative Risk Analysis, Mitigation Action, Café.

Abstrak

Saat ini, banyak perusahaan mulai berinvestasi pada aset teknologi informasi untuk meningkatkan kinerja dan pelayanan bisnisnya. Termasuk juga pada café modern yang saat ini sedang menjadi trend bisnis yang menjanjikan, apalagi jika memiliki cabang di berbagai tempat. Seperti halnya pada café XYZ, teknologi informasi berperan penting dalam pengaturan alur bisnis maupun manajemen pegawai agar dapat dipastikan dapat berjalan sesuai visi perusahaan. Namun, tidak bisa kita pungkiri bahwa ada risiko yang akan muncul jika kita berinvestasi asset IT. Penelitian ini berhasil memanfaatkan Qunatitative Risk Analysis (QRA) Method untuk melakukan perhitungan dan tabulasi untuk setiap potensi risiko yang mungkin ada. Hasilnya menunjukan ada potensi peningkatan nilai kerugian sebesar 371,5% dari modal investasi Aset IT yang dikeluarkan, atau sebesar 477.388.063 Rupiah. Dengan detail melalui Analysis Across Asset menghasilkan Accros Asset Value diurutan pertama yaitu Asset Mini PC, dengan nilai kerugian sebesar 127.440.000 Rupiah. Dan Melalui Analysis Across Risk menghasilkan Risk Value diurutan pertama yaitu Accidental Errors, dengan nilai kerugian sebesar 184.038.000 Rupiah. Implikasi dari hasil ini adalah stakeholder bisa Menyusun dan merencanakan mitigasi aksi untuk mengurasi potensi munculnya kerugian bagi perusahaan. Mitigasi aksi bisa berupa regulasi, standard operasional procedure (SOP), usulan aplikasi pemantauan, atau Tindakan strategis pada top-level management. Sehingga setiap ancaman dan risiko dapat dikontrol dan dimanage oleh XYZ Café.

Kata Kunci: Aset IT, *Quantitative Risk Analysis*, Aksi Mitigasi, Café.

Received on October, 2021. Accepted on December, 2021

I. Introduction

INFORMATION technology provides an important role in supporting all business processes in the company. In the current era, both large and small companies will use information technology to improve their business performance and services [1]. Adopting information technology has dominated today's business model to compete with other competitors. Companies will invest in IT assets to meet these needs. This includes modern cafes, which are becoming a promising business trend, especially if they have branches in various places [2]. XYZ cafe is no exception, one of cafeterias in Lampung Province with 3 branches in 2 cities (Bandar Lampung City and Metro City). Where until now, XYZ Cafe has invested a lot of IT assets. The purpose of adopting information technology in the current era is not only limited to following trends and attracting consumers. Information technology plays an important role in managing business flows, employee management, time quality, cost efficiency, and the real-time stock procurement supervision [3]–[5]. All aim to ensure the company can run according to the company's vision. The impact of using IT assets makes XYZ cafe more efficient because it has a more regular and faster flow of business processes. However, we cannot avoid that risks will arise if we invest in IT assets. Because basically the same as non-IT assets, IT assets also have their threats and risks. Moreover, IT assets are vulnerable in their use. In addition, the maintenance or maintenance of IT assets must also be carried out in detail and care. Because of this, it is necessary to measure IT assets because this is an essential part of the company's business strategy. Risk measurement is carried out to determine the level of threats that may arise in the operational practice of IT assets owned by cafe XYZ. This measurement is useful for maintaining the asset value in XYZ cafe so that if there is damage, it will not cause a decrease in the value of the asset. In addition, the results of this study can also increase awareness for interested stakeholders to create better asset management. In this study, the risk measurement tool used is the Quantitative Risk Analysis (QRA) Method. The use of this QRA method can help estimate the probability of risks and threats [6]. This research aims to find out all the risks that may arise so that they can be predicted and calculated to create a more orderly IT asset management at XYZ Café.

II. Literature Review

Assets are defined as all the resources owned by a company. All these resources are controlled and utilized by the company to achieve business goals. In the context of assets, several resources are grouped as Information Technology (IT) assets. The perceived benefits of these assets are assistance for operations in information technology. IT assets themselves are divided into two types, namely tangible and intangible. If the IT asset has a physical form such as a computer, monitor, modem, server, smartphone, or CCTV, it can be classified as Tangible. As for IT assets that are physically intangible, they can be classified as intangibles. Some examples of IT assets in the intangible category are mobile applications, official websites, antivirus, operating system licenses, and protocol certificates.

Furthermore, if the threat from IT assets occurs, it will pose a risk. Risk is an adverse situation that arises due to a threatening event such as loss, injury, or other negative consequences. Some organizations define risk as follows.

TABLE II
Risk Definition Reviews

Risk Definition	Source
Something that has an influence on future event uncertainty that can have a positive or negative effect.	ISO 31000 [7]
An outcome that is the uncertainty that comes from the correlation between potential impacts level and likelihood scale.	ICT Risk Matrix by Queensland Treasury [8]
An event or occurrence that is likely to have positive or negative consequences.	ISO GUIDE 73[9]

The investment value of IT assets that is not small makes risk control important as a preventive measure in mitigating the emergence of threats [10], [11]. Risk control activities start from how we can measure and predict every possible threat that comes because the protection of every IT asset is critical, especially in the current era, where every business and operational process has a high utilization rate of information technology innovation. As in the research of J.W. Merritt, who has succeeded in modeling a method that can measure the level of risk of each IT asset. The Quantitative Risk Analysis (QRA) method is a scientific and systematic tool used to build a matrix and tabulation of any correlation between IT assets and threats that may arise [6]. This model itself has been proven to be used in several studies related to measuring IT assets in various organizations. One study stated that PT. HMS is one of the companies engaged in manufacturing [12]. This company invests a lot in information technology innovation in running its business. The study concludes there must be more action to mitigate the risk of Laptop assets (675 units), considering that the Across Asset Value of Laptop assets has the highest value. If the risk to laptop assets occurs, the company's total material loss is 14 billion rupiahs. There is a valuation of 150% of the value of the capital issued to procure the core laptop itself, which is 9 billion Rupiah.

Furthermore, measurements have also been carried out in other sectors, namely Health. A business organization in the health sector that uses a lot of technological advances is a hospital. As the place that invests the most IT assets, the hospital is one of the potential case studies if it can be measured using the QRA method. The study's findings stated that the server is the IT asset with the most significant loss value in a hospital [13]. This result becomes if you look at the role of a server in a hospital as a storage place for various business activity logs that are very diverse.

III. Research Method

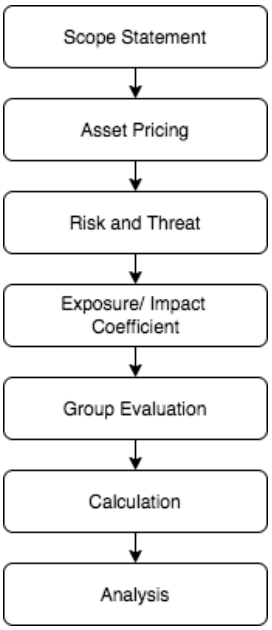

Fig. 1. Research Flow

In this study, the method approach used is quantitative. According to the reference, there are seven steps in conducting research, namely the Quantitative Risk Analysis Method [6]. The first step is the Scope Statement, which is the organization's determination to be measured. In this study, XYZ Café is one of the cafes in Lampung Province. XYZ Café has 3 branches. Two branches are in Bandar Lampung City, and one unit is in Metro City. During the expansion of additional extensions, the role of IT asset investment is significant.

Therefore, it is only natural that XYZ cafe dares to fulfill a large budget for IT assets. In the second stage, Asset Pricing, this research will register the rupiah value of the investment of each IT asset. It will then be mapped and tabulated the Risk and Threat of each purchase. The fourth stage, Exposure/Impact Coefficient, is carried out to identify the impact of asset vulnerabilities on threats that may arise. Several variables will be searched and calculated, such as Exposure Factor (EF), as the percentage of asset loss due to threats. As the fifth stage, Group Evaluation reviews the threats and EF obtained previously for each IT asset from XYZ Cafe. The next step is Calculation; single Loss Expectancy (SLE), Annualized Rate Occurrence (ARO), and Annualized Loss Expectancy (ALE) will be calculated. SLE is the monetary value that may be lost in one risk event. In comparison, ARO is the percentage of the average number of threats that appear on each asset in 1 year. An ALE is a value that represents the possible number of SLEs that may appear in a year. Furthermore, here are the formulas in the Calculation stage.

$$SLE = Asset\ Value\ x\ EF \quad (1)$$

$$ALE = SLE\ x\ ARO \quad (2)$$

The SLE of an IT asset is obtained by multiplying its Asset Value with its EF value. Furthermore, the asset's SLE value can be used to help get its ALE value by multiplying with its ARO. The last stage is in the form of analysis, where at this stage there are two methods of analysis, namely Analysis Across Assets (AAA) as the total value of rupiah based on each IT asset. Furthermore, Analysis Across Risk (AAR) is the full value of rupiah based on each threat for all IT assets. Moreover, a tabulation of the ranking based on risk will be generated. This is used as a reference for stakeholders to determine priorities in controlling and managing their IT assets.

IV. Results And Discussion

TABLE II
List of IT Assets

Asset Type	Amount	Asset Code
Mini PC	4	A.1
Monitor	4	A.2
Smart TV	3	A.3
Tablet/ Handphone	6	A.4
Thermal Printer	3	A.5
Modem	3	A.6
Projector	4	A.7
Operating System License	4	A.8
Point of Sales/ Cashier Apps	1	A.9
Stock Inventory Apps	1	A.10
Employee Attendance Apps	1	A.11
Official Websites	1	A.12
Sales Database	1	A.13
Attendance Database	1	A.14
Inventory Database	1	A.15
Application Manual Book/ SOP Documentation	3	A.16
IT Support Personnel	1	A.17

Resource: XYZ Cafe's Logistics Documents

Determination of the scope of this study is XYZ Café. The interviews and field observations found several IT assets, as shown in Table II. Business processes that utilize digitization from ordering payment to

bookkeeping transactions make investments in IT assets quite a lot. It consists of several hardware devices such as Mini PC, Smart Tv, to smartphones (used for online and offline orders). Furthermore, XYZ café also invests in modems from the infrastructure, which are used to build data exchange communications between branches and create mobility in running a business. Furthermore, there are also several IT assets in the form of software, such as the Cashier application, Stock Inventory, and the Employee Attendance application.

Moreover, the data owned by XYZ Café is stored on a cloud server, with a reasonably significant investment value as well. To ensure that all IT assets can be utilized and appropriately used, XYZ café has an SOP document/Manual Book for each application used. With this document, the utilization of each IT asset will be controlled. Furthermore, XYZ café has one particular person to maintain IT assets. This employee is a freelancer who is responsible for all branch cafes owned. The next stage is to perform Asset Pricing for all IT assets owned. As shown in Table III, the total investment value of XYZ Café is Rp. 128,250,000.00, which includes a significant asset investment for a business organization of the type of Small Medium Enterprises (SME's) that has services and goods from non-IT.

TABLE III
ASSETS PRICING OF XYZ CAFÉ ASSETS

Asset Code	Amount	Unit Price	Total Price
A.1	4	5.400.000	21.600.000
A.2	4	1.550.000	6.200.000
A.3	3	6.450.000	19.350.000
A.4	6	2.490.000	14.940.000
A.5	3	375.000	1.125.000
A.6	3	345.000	1.035.000
A.7	4	2.350.000	9.400.000
A.8	4	1.950.000	7.800.000
A.9	1	15.000.000	15.000.000
A.10	1	10.000.000	10.000.000
A.11	1	4.500.000	4.500.000
A.12	1	8.000.000	8.000.000
A.13	1	2.500.000	2.500.000
A.14	1	1.500.000	1.500.000
A.15	1	2.000.000	2.000.000
A.16	3	350.000	1.050.000
A.17	1	2.250.000	2.250.000
Total			128.250.000

RESOURCE: XYZ CAFE'S LOGISTICS DOCUMENTS

Table IV shows the results of discussions and calculations when conducting a Forum Group Discussion (FGD) with XYZ Café. The list of ARO values of each threat that may occur according to the QRA Method is calculated and tabulated. ARO itself is the potential value of the possibility of a threat appearing within one year. Considering XYZ's demographics and social conditions, the ARO results for each threat have been agreed upon as in Table III. Power Loss (T.1) occurs quite often in the Lampung area. And for the second position is Accidental Errors (T.4) from XYZ Café employees themselves. Based on the information obtained, the use of human resources is taken at the quality of the Regional Minimum Wage with the basic ability level only.

TABLE IV
LIST OF THREAT'S ARO VALUE

Threat Type	ARO Value	Threat Code
Power Loss	5	T.1
Communication Loss	2	T.2
Data Integrity Loss	1,2	T.3
Accidental Errors	4	T.4
Computer Virus	0,6	T.5
Abuse of access privileges by employees	0,2	T.6
Natural disasters	0,1	T.7
Attempted Unauthorized System Access by Outsider	0,2	T.8
Theft or Destruction of Computing Resource	1	T.9
Destruction of Data	0,1	T.10
Abuse of Access Privileges by Other Authorized User	0,1	T.11
Successful Unauthorized System Access by Outsider	0,1	T.12
Non-disaster downtime	0,15	T.13
Fire	0,2	T.14
Earthquake	0,2	T.15

RESOURCE: FGD WITH XYZ CAFÉ OWNER AND CALCULATING THE DATA

TABLE V
SCALE OF IMPACT COEFFICIENT

Value	SLE's Description
0	The asset is immune to the threat, and the threat's manifestation does not cause any damage.
0,3	There is generally no damage, but if catastrophic damage is happened that need total replacement is possible.
0,5	It's equally possible that no damage will occur or that a complete replacement will be required if the threat arises in the same percentage.
0,7	A successful threat usually necessitates the replacement of the damaged system. It will occasionally, if you are unlucky, not work well again, possibly even crush entirely.
1	When the damage is discovered, the only choice is to replace the identified asset entirely.

RESOURCE: A METHOD FOR QUANTITATIVE RISK ANALYSIS BY J.W. MERRIT [6].

Impact Coefficient Scale becomes very important when calculating Exposure Factor (EF). In the results of the FGD with stakeholders of XYZ Café, table V becomes a reference when determining the EF of each IT Asset. In addition, JW Merrit itself has provided the EF value of every IT asset that is common to a business organization. Such as Computers, Monitors, Printers, Operating Systems, Applications, Databases, Documentation, and Personnel have been given EF value references for each threat [6]. However, suppose some assets have not been defined in the QRA Method reference or are unique, such as Smart TVs and Projectors. In that case, the QRA method provides authority for assistance in determining their EF through the consideration of Table V. So, Table VI is the result of deciding the EF of each asset against each threat.

TABLE VI
EXPOSURE FACTOR (EF) OF ASSET IT IN EVERY THREAT

	T.1	T.2	T.3	T.4	T.5	T.6	T.7	T.8	T.9	T.10	T.11	T.12	T.13	T.14	T.15
A.1	0,2	0,2	0	0,7	0,5	0,4	0,5	0,2	1	0	0	0,8	0,2	0,3	0,3
A.2	0	0	0	0,1	0	0	0,5	0	1	0	0	0,1	0	0,3	0,3
A.3	0	0	0	0,1	0	0	0,5	0	1	0	0	0,1	0	0,3	0,3
A.4	0,2	0,2	0	0,7	0,5	0,4	0,5	0,2	1	0	0	0,8	0,2	0,3	0,3
A.5	0,1	0,1	0	0,1	0,05	0,1	0,5	0,1	1	0	0	0,15	0,05	0,3	0,3
A.6	0,2	0,4	0	0,1	0,3	0,1	0,5	0,2	1	0	0	0,1	0,2	0,3	0,3
A.7	0	0	0	0,1	0	0	0,5	0	1	0	0	0,1	0	0,3	0,3
A.8	0,2	0,1	0	0,1	0,8	0,2	0,5	1	1	0	0	0,6	0,05	0,3	0,3
A.9	0,1	0,1	0	0,4	0,3	0,2	0,5	0,3	1	0	0	0,6	0,2	0,3	0,3
A.10	0,1	0,1	0	0,4	0,3	0,2	0,5	0,3	1	0	0	0,6	0,2	0,3	0,3
A.11	0,1	0,1	0	0,4	0,3	0,2	0,5	0,3	1	0	0	0,6	0,2	0,3	0,3
A.12	0,1	0,1	0	0,1	0,2	0,2	0,5	1	1	0	0	0,2	0,2	0,3	0,3
A.13	0,2	0,06	0,97	0,5	0,95	0,3	0,5	1	0,02	1	0,3	0,7	0,2	0,3	0,3
A.14	0,1	0,3	0,7	0,5	0,3	0,5	0,5	0,3	0,4	1	0,3	1	0,2	0,3	0,3
A.15	0,2	0,06	0,97	0,5	0,95	0,3	0,5	1	0,02	1	0,3	0,7	0,2	0,3	0,3
A.16	0	0,5	0	0,11	0	0,1	0,5	0	0,2	0	0	0,1	0,1	0,3	0,3
A.17	0,1	0,1	0	0,1	0	0,3	0,5	0	0	0	0,3	0,3	0,1	0,3	0,3

RESOURCE: FGD WITH XYZ CAFÉ OWNER AND MEASURING THE DATA

Table VII shows the results of the SLE calculation for each IT asset (A.1 until A.17) for each Threat (T.1 until T.15). Furthermore, Across Asset Analysis (AAA) and Across Risk Analysis (ARA) was carried out to give a deeper meaning. AAA produces a sequence of total losses based on the Asset group, while ARA is based on Risk. Table VIII shows the results of AAA. And Table IX shows the results of the ARA.

TABLE VII
Single Loss Expectancy (SLE) of Asset IT in Every Threat

	T.1	**T.2**	**T.3**	**T.4**	**T.5**	**T.6**	**T.7**	**T.8**	**T.9**	**T.10**	**T.11**	**T.12**	**T.13**	**T.14**	**T.15**
A.1	21.600.000	8.640.000	0	**60.480.000**	6.480.000	1.728.000	1.080.000	864.000	21.600.000	0	0	1.728.000	648.000	1.296.000	1.296.000
A.2	0	0	0	2.480.000	0	0	310.000	0	**6.200.000**	0	0	62.000	0	372.000	372.000
A.3	0	0	0	7.740.000	0	0	967.500	0	**19.350.000**	0	0	193.500	0	1.161.000	1.161.000
A.4	14.940.000	5.976.000	0	**41.832.000**	4.482.000	1.195.200	747.000	597.600	14.940.000	0	0	1.195.200	448.200	896.400	896.400
A.5	562.500	225.000	0	450.000	33.750	22.500	56.250	22.500	**1.125.000**	0	0	16.875	8.438	67.500	67.500
A.6	**1.035.000**	828.000	0	414.000	186.300	20.700	51.750	41.400	1.035.000	0	0	10.350	31.050	62.100	62.100
A.7	0	0	0	3.760.000	0	0	470.000	0	**9.400.000**	0	0	94.000	0	564.000	564.000
A.8	**7.800.000**	1.560.000	0	3.120.000	3.744.000	312.000	390.000	1.560.000	7.800.000	0	0	468.000	58.500	468.000	468.000
A.9	7.500.000	3.000.000	0	**24.000.000**	2.700.000	600.000	750.000	900.000	15.000.000	0	0	900.000	450.000	900.000	900.000
A.10	5.000.000	2.000.000	0	**16.000.000**	1.800.000	400.000	500.000	600.000	10.000.000	0	0	600.000	300.000	600.000	600.000
A.11	2.250.000	900.000	0	**7.200.000**	810.000	180.000	225.000	270.000	4.500.000	0	0	270.000	135.000	270.000	270.000
A.12	4.000.000	1.600.000	0	3.200.000	960.000	320.000	400.000	1.600.000	**8.000.000**	0	0	160.000	240.000	480.000	480.000
A.13	2.500.000	300.000	2.910.000	**5.000.000**	1.425.000	150.000	125.000	500.000	50.000	250.000	75.000	175.000	75.000	150.000	150.000
A.14	750.000	900.000	1.260.000	**3.000.000**	270.000	150.000	75.000	90.000	600.000	150.000	45.000	150.000	45.000	90.000	90.000
A.15	2.000.000	240.000	2.328.000	**4.000.000**	1.140.000	120.000	100.000	400.000	40.000	200.000	60.000	140.000	60.000	120.000	120.000
A.16	0	**1.050.000**	0	462.000	0	21.000	52.500	0	210.000	0	0	10.500	15.750	63.000	63.000
A.17	**1.125.000**	450.000	0	900.000	0	135.000	112.500	0	0	0	67.500	67.500	33.750	135.000	135.000

Resource: FGD with XYZ Café Owner and Calculating the Data

TABLE VIII
RANKING OF IT ASSET BASED ON ACROSS ASSET VALUE

Ranking	IT Asset	Across Asset Value
1	Mini PC	127.440.000
2	Tablet/ Handphone	88.146.000
3	Point of Sales/ Cashier Apps	57.600.000
4	Stock Inventory Apps	38.400.000
5	Smart TV	30.573.000
6	Operating System License	27.748.500
7	Official Websites	21.440.000
8	Employee Attendance Apps	17.280.000
9	Projector	14.852.000
10	Sales Database	13.835.000
11	Inventory Database	11.068.000
12	Monitor	9.796.000
13	Attendance Database	7.665.000
14	Modem	3.777.750
15	IT Support Personnel	3.161.250
16	Thermal Printer	2.657.813
17	Application Manual Book / SOP Documentation	1.947.750
TOTAL		**477.388.063**

Based on Table VIII, Mini PC and Mobile are two hardware assets that must be given concentration of attention and supervision. The loss of these two assets could result in more than 200 million Rupiah. Meanwhile, Software Assets, namely Point of Sales Apps and Stock Inventory Apps, are the highest in the ranking based on Across Assets Value, with the loss value of both being able to reach almost 100 million Rupiah.

TABLE IX
RANKING OF RISK BASED ON ACROSS RISK VALUE

Ranking	Risk	Across Risk Value
1	T.4	184.038.000
2	T.9	119.850.000
3	T.1	71.062.500
4	T.2	27.669.000
5	T.5	24.031.050
6	T.14	7.695.000
7	T.15	7.695.000
8	T.8	7.445.500
9	T.3	6.498.000
10	T.7	6.412.500
11	T.12	6.240.925
12	T.6	5.354.400
13	T.13	2.548.688
14	T.10	600.000
15	T.11	247.500
TOTAL		**477.388.063**

Unlike the previous Table, Table IX displays the analysis results based on Across Risk Value. If you look at Table VII, the most significant loss value of each IT asset is only spread over four threats, namely T.4, T.9, T.1, and T.2. So naturally, Table IX shows the 4 Threats at the top. T.4, as a threat from "Accidental Errors" with a possible loss value of up to 200 Million Rupiah, becomes T.4 as the first rank. One of the reasons is that this threat arises according to the ARO value itself (refer to Table IV). Describing that human errors from employees still occur frequently. The data shows that quality of human resources cause employee negligence. Furthermore, T.9, as a threat from "Theft or Destruction of Computing Resource," has a large impact if it occurs with a loss value of 119 million Rupiah. Considering that all business processes of XYZ café are operated through information technology, this threat must be watched out for and minimized. In the other hand, T.1 is in third place, with a threat definition of "Power Loss" with a possible loss value of 71 million Rupiah. Lampung Province itself has geographic and demographic conditions that allow frequent power outages. This condition becomes a serious threat if not addressed. XYZ Café need to be providing the generators as an additional energy source. And the fourth place is occupied by T.2 as a threat from "Communication Loss" with a loss value of 27 million Rupiah. The quality problem of the internet at XYZ cafe is a common thing. However, considering that in Lampung province, only a few choices of internet providers are proper in terms of service quality. So, this T.2 must be watched out for because it becomes a serious threat to IT assets at XYZ Café.

V. Conclusion

Studies related to IT Asset Assessment at XYZ Café using the Quantitative Risk Analysis (QRA) Method can provide the required results. The investment value of IT assets issued by XYZ Café is 128,250,000 Rupiah, and the potential loss value that could threaten is 477,388,063 Rupiah. It means an increase in losses that XYZ Café can accept by 371.5%. Even if viewed separately for each IT asset. Mini PC ranks at the top of hardware assets because it experienced an increase in potential losses of 606.8% of the capital issued. The capital from the Mini PC is 21,000,000 Rupiah, and the potential loss is 127,440,000 Rupiah. Likewise, Point of Sales Apps to be the top for Software assets. We have experienced an increase in loss potential of 384.4% of the issued capital value. The capital from the point of Sales Apps development is 15,000,000 Rupiah, and the potential loss is 57,600,000 Rupiah. A significant increase in weight can cause business disruption and big losses for the company if it occurs, so some implications that can be given to stakeholders can be started by looking at the results of Table VII, Table VIII, and Table IX. The three tables can be used as a reference to find out the most significant potential threat from each asset. Companies can formulate appropriate mitigation actions by building a priority scale. Mitigation actions can be additional regulations, Standard Operational Procedures (SOP), monitoring applications, or strategic activities at the top management level. Furthermore, control and evaluation of mitigation actions planned and implemented can be carried out.

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