

# The Operational Risk Analysis based on the Enterprise Risk Management (ERM) Approach at PT. AIJ

Dendy Dirgantara, Adolf B.Heatubun  
Postgraduate In Management , Christian University of Indonesia

**Abstract:-** PT. AIJ is a manufacture company engaged in the manufacture of adhesives or glues for industrial purposes. In carrying out its business PT. AIJ will face risks arising from internal and external factors that can provide losses to the company. The purpose of this study is to identify, analyze operational risks, the impacts caused by these risks and to find out what actions will be carried out as a measure to anticipate or prevent losses from operational risks to PT. AIJ. This research uses an Enterprise Risk Management (ERM) approach. From the identification of operational risks, researchers showed that there are 31 risks of onal operations that may occur in PT. AIJ. These risks come from human resource risks, process risks, raw material procurement risks, raw material and finished goods supervision risks, system risks, goods delivery risks so, environmental risks, risks reputation of enterprises and risks of handling waste. From the results of the risk assessment, the researcher provides solutions or alternatives at the Very High to medium risk levels as an action that must be taken by PT. AIJ to deal with these risks by reducing the risks.

**Keywords:-** Risk management, Operational Risk, Enterprise Risk Management (ERM)

## I. INTRODUCTION

The main purpose of establishing a company is to process profits with maximum profit so that the sustainability of the company can be maintained, but to achieve this goal, The company is demanded to be able to provide bcharcoal or quality services. In terms of providing quality goods and services, it usually goes through several processes ranging from the plan for making goods, the manufacturing process to the goods produced. This manufacturing process is usually often spelled out in errors or incompatibilities that can pose risks and have a lossal impact on the company. Risk is an unavoidable uncertainty in the operation of a business and can also be said to be a part of the company's activities where risk not only does it contain negative impacts but there are also 2 risks that have a positive impact (Sutanto, 2013). According to (Darmawan, 2011) there are 2 categories of risk sources in companies , including External Risks and Internal Risks. In addition, the emergence of risks can occur in various aspects of the company, such as production process risks, financial risks, human resource risks and occupational safety risks.

With the many risks that may occur in the business, therefore it is necessary to carry out risk control and management aimed at being able to maintain and develop goods and quality services, especially in the future, the competition in each company will be more intense. There is also a way to manage risks and minimize the impact of risks is to implement risk management. According to (Darmawi, 2016) Risk management is a way of organizing a risk that will be faced, both known and unknown or unthinkable, namely by transferring the risk to another party, avoiding the risk, reducing the negative effects of the risk, and accommodating some or all of the consequences of a particular risk. One way of risk management to manage and minimize the impact of risk is to implement *Enter Risk Management* (ERM).

According to (COSO Enterprise Risk Management, 2004) *Enterprise Risk Management* (ERM) is a process, which is influenced by the management, board of directors, and other personnel of an organization, is applied in a strategic setting, and includes the organization overall, designed to identify potential events affecting an organization, manage risks within the tolerance of an organization, to provide sufficient guarantees deservedly relates to the achievement of the goals of the organization. Therefore, the implementation of *Enterprise Risk Management* (ERM) is very important for companies because it can manage risks and can minimize the impact of risks that occur when achieving goals companies.

PT. AIJ is a manufacturing company engaged in the manufacture of adhesives or glues for industrial purposes. This company has developed many glue products that are used for each of your needs, such as building needs, furniture, shoes and so on. Within a month the demand for glue products for building needs reached 3,000,000 Pcs. With the high demand from customers, companies are required to carry out the produksi process effectively and efficiently in order to meet customer satisfaction. This aims to achieve the company's goal , namely to make a profit, provide quality products.

At this time, PT. AIJ still has not carried out the identification of risk management and risk management aimed at managing and anticipating the risks that may occur in the company. this is very much realized by the company, because there have been several times events related to operations causing losses to the company. In 2020 there was

a very heavy rain that resulted in flooding in the raw material and component warehouse area, causing the raw materials and components to get wet and could not be used for the production process, still not achieving customer demand caused by the destruction of the machine during the production process, the schedule of arrival of raw materials which is not in accordance with the scheduled time so that the product is not made, does not run the *Standart Operating Procedure* (SOP) so that it causes the product to be into quarantine, ordering raw materials that exceed the capacity of the warehouse to store raw materials and components so as to make the goods a slowmoving category, the disorderly disorliness of the karyawan using personal protective equipment so as to cause accidents at work, incompatibility of the actual physical goods with the stock report on administration.

Judging from some of the problems above, it can be concluded that internal operational control is still not good. Based on the results of observations to the field and information from interviews with related operational managers, that the company has not identified and analyzed the risks that can be occurs in the company internally as well as externally. Based on the above problems, PT. AIJ must identify and analyze operational risks. Therefore, from here the author is interested in conducting research on PT. AIJ with the title "Operational Risk Analysis Based on the *Enterprise Risk Management* (ERM) Approach in PT. AIJ".

#### ➤ *Problem Formulation*

Based on the background of the above problems, the identification of the problem is how to analyze operational risks based on the *Enterprise Risk Management* (ERM) approach pa da PT. AIJ?

#### ➤ *Research Objectives*

Based on the above problems, this study aims to determine operational risk analysis based on the *Enterprise Risk Management* (ERM) approach at PT. AIJ.

## II. LITERATURE STUDIES

#### ➤ *Risk*

According to (Hanggareni, 2010) in M. Alkindhy F (2021) Risiko are events / events that have the potential to occur that may cause losses to a company. Risk is also the possibility of deviations from expectations that can cause losses (Kasidi, 2010).

According to (Djohanputro, 2006) in M. Alkindhy F (2016) there are 4 categories of types of risk in companies, namely:

- Financial Risk is the fluctuation of the company's financial targets or monetary size due to the turmoil of macro variables.
- Operational Risk is the potential overwriting of expected results due to malfunctioning of a system, human resources, technology, or other factors. Operational risk is a risk that can come from the internal or external of the company where all risks related to fluctuations in the company's business results due to the influence of

matters related to system failures or surveillance and events that cannot be controlled by the company.

- Strategic Risk is a risk that can affect corporate and strategic exposure as a result of strategic decisions that are not in accordance with the external and internal environment of the business.
- Externality Risk is the potential for deviation of results on corporate and strategic exposures and can have an impact on the potential for business closures, due to the influence of external factors.

#### ➤ *Risk Management*

Every risk to the company cannot be avoided, but can only minimize the impact of these risks, namely by implementing risk management. According to Darmawi (2016) in Dwi Sepi Haryani & Risnawati (2018), Risk management is a way of organizing a risk that will be faced, both known or the unknown or unthinkable, namely by transferring risks to other parties, avoiding risks, reducing the negative effects of risks, and accommodating some or all the consequences of certain risks.

There are 5 things that are the main targets for the implementation of risk management that must be achieved by a company according to (Wiryo, 2008) in Ajeng Retna Maharani (2018), namely:

- Reduce costs (*least cost*)
- Stabilizing the company's revenue
- Minimizes disruptions in production
- Developing the growth of the company
- Have a corporate social responsibility

#### ➤ *Enterprise Risk Management (ERM)*

**Enterprise Risk Management (ERM)** is a comprehensive risk management system faced by organizations for the purpose of increasing company value (Hanafi, 2006) in M. Alkindhy F (2021). *Enterprise Risk Management* (ERM) there are 8 interrelated components proposed by COSO (2004) in Normaria Mustiana Sirait (2016) so that it was developed into a *leader* from 2004 to now. These eight components are derived from how management run the company and are integrated with the management process. These eight components are needed to achieve the company's goals, both strategic goal 4, operational, financial reporting, and compliance with statutory provisions.

#### ➤ *Komponen-Component ERM*

There are eight components of *Enterprise Risk Management* (ERM) according to Moller (2009) in Dwi Septi Haryani & Risnawati (2018), namely :

- The internal environment determines the color of an organization and is responsible for the way of looking at the risks of everyone in the organization.
- Objective setting, management must set the goals of the organization in order to identify, access, and manage risks.
- Event identification, where this component identifies potential events both occurring in the internal and external environment of the organization that affect the

strategy or achievement of the objectives of the organizations.

- Risk assessment (risk assessment), where this compensatory assesses the extent to which the impact of the event can interfere with the achievement of the objectives.
- Risk response, an organization must be able to determine the attitude towards the results of the risk assessment.
- Control activities (control activities), policies and procedures are established and implemented to help ensure that the risk response runs effectively
- Information and communication, relevant information is identified, captured, and communicated, in a form or time that allows everyone to carry out their responsibilities
- Monitoring, the entire ERM process is monitored and modification is carried out if necessary.

### III. METHODOLOGY

This research method can be said to use qualitative research that aims to obtain facts or operational events based on the *Enterprise Risk Management* (ERM) approach. Data sources in the study are divided into 2 types, namely primary data and secondary data. In this study, data collection techniques were obtained by means of interviews, observations and while secondary data were obtained from journals, papers, reports, modules, books, websites related to other research.

#### ➤ *Object of Study*

The object of research in this study is PT. AIJ which is a manufacturing company engaged in adhesives or glues for the benefit of the industry. This study only focuses on variables related to operational risks. The source of this research is the manager of *the Plant Production Inventory Control* (PPIC), whose name is Markus Kinarya Nugraha. The sampling technique uses *Purposive Sampling*, with the consideration that the person who is used as an informant really understands the operational conditions at PT. AIJ.

### IV. RESULTS AND DISCUSSION

The first step taken by PT. AIJ is to identify risks using the *Enterprise Risk Management* (ERM) method. The application of risk management is based on the *Enterprise Risk Management* (ERM) component of COSO which begins with the company's internal environment, setting goals, identifying risks that occur, conducting assessments to risks, risk control, and calculations carried out.

#### ❖ *Internal Environment*

PT. AIJ is a manufacturing company engaged in adhesives or glues for industrial purposes. This company was founded from 1975 until now, although there have been several changes in the name of the company along with its vision and mission. At this time, this company has a vision to make the company the best in its field. In order to achieve the company's vision, namely the determination of SOPs to carry out their activities every day, carry out innovations to develop products and services with consistent quality, safe, environmentally friendly and create a marketing strategy aimed at finding customers.

#### ❖ *Objective Setting*

In setting goals or *Objective Setting* at PT. AIJ dapat pay attention to four sides of the purpose, namely:

- **The Strategic Objective** applied by the company is by innovating to develop adhesive or glue products according to their respective needs, which aims to increase the share of pasar.
- **The operating objectives** implemented by the company are making improvements to its management system and making SOPs to run the company's operational business.
- The Reporting System implemented by the company is able to provide reports in a transparent and accurate way, but currently the company has not improved and improved the system that functions as where the report is stored, causing a discrepancy between the inputted data and the actual data.
- **Compliance** Objectives implemented by the company are by complying with all government regulations.

#### ➤ *Risk Identification*

Identify the risks that may occur in PT. AIJ is based on the company's ongoing business processes. In this study, risk is focused on operational risks due to several problems that have occurred in the company due to operational risks. When viewed from these problems, the company has 8 risks, namely human resource risk, productivity risk, raw material procurement risk, supervision risk warehouse systems and system risks. The initial stage is carried out to identify risks in PT. AIJ by making observations to the field and conducting interviews with PPIC managers. Furthermore, make a list of indicators of risks that will occur from several journals that are used as references, then the selection of indicators is carried out by adding or reducing the risks that will occur to the company. After completion of the risk indicator selection process, a questionnaire was made to determine the risk assessment.

Types of Risks	Number	Risk
Human Resource Risk	A1	Employee performance performance decreases
	A2	Less effective employee development strategies
	A3	Work accidents
	A4	Employee satisfaction (rewards & punish) is not appropriate
	A5	Incorrectly inputting / entering data
Process Risk	B1	Quarantine Product Results (not up to standard) due to errors in the production process
	B2	Engine breakdown at the time of production
	B3	SOPs are not executed in the production process
	B4	Incorrectly entering raw materials during the production process
Raw Material Procurement Risks	C1	The arrival of raw materials is not on a predetermined schedule
	C2	The quality of the raw materials sent is not in accordance with the requested standards
	C3	Single Supplier / one supplier
	C4	Raw material heating errors
	C5	Forecast inaccurate request
Risks of supervision of raw materials and finished goods	D1	Errors in the preparation of raw materials for the production process
	D2	Incompatibility of the actual stock of goods with the existing stock programmed
	D3	High Buffer Stock of goods exceeds warehouse capacity
	D4	Damage to raw materials or finished goods at the time of storage is warehoused
	D5	Raw materials and finished goods that expire because they are not used / sold
System Risk	E1	The occurrence of disruptions in the system that cause the administration / transaction process to stop
	E2	The occurrence of disruptions in the system that cause the loss of company data
Risks of Delivery of finished goods	F1	Damage to the product or goods at the time of delivery
	F2	Loss of goods at the time of delivery
	F3	Car strike at the time of delivery of goods to the customer / customer
	F4	Car accident at the time of delivery due to the condition of the brakes not working properly
Environmental Risks	G1	Wetness / destruction of raw materials caused by flooding
	G2	Power outages that cause administrative processes to stop
Company Reputation Risk	H1	High complaints and returns of goods from customers due to the quality of goods that are not up to standard or contamination of the goods occurs
	H2	Polluted environmental areas of the company are caused by B3 waste
Risks of Handling B3 Waste	I1	Stacking of paper (sak) raw materials due to the collector not taking
	I2	Leakage of liquid or liquid raw materials to the warehouse floor

Table 1:- Identification of Operational Risks in PT. AIJ

➤ *Risk Assessment*

Then after the identification of the risks that will occur in PT. AIJ, next performs a risk assessment. It can be seen in the table above that there are 32 risks that can occur in the company, to assess these risks based on the level n probability of occurrence (*Probability*) and the severity of the impact of the risk (*Severity*).

Types of Risks	Number	Risk	Probability	Impact	Value Risk
Human Resource Risk	A1	Employee performance performance decreases	2	2	4
	A2	Less effective employee development strategies	3	5	15
	A3	Work accidents	2	1	2
	A4	Employee satisfaction (rewards & punish) is not appropriate	5	4	20
	A5	Incorrectly inputting / entering data	1	1	1
Process Risk	B1	Quarantine Product Results (not up to standard) due to errors in the production process	3	3	9
	B2	Engine breakdown at the time of production	2	2	4
	B3	SOPs are not executed in the production process	2	2	4
	B4	Incorrectly entering raw materials during the production process	2	2	4
Raw Material Procurement Risks	C1	The arrival of raw materials is not on a predetermined schedule	5	5	25
	C2	The quality of the raw materials sent is not in accordance with the requested standards	2	1	2
	C3	Single Supplier / one supplier	4	5	20
	C4	Raw material heating errors	1	1	1
	C5	Forecast request inaccurate	4	5	20
Risks of supervision of raw materials and finished goods	D1	Errors in the preparation of raw materials for the production process	2	2	4
	D2	Incompatibility of the actual stock of goods with the existing stock programmed	2	1	2
	D3	High Buffer Stock of goods exceeds warehouse capacity	4	4	16
	D4	Damage to raw materials or finished goods at the time of storage is warehoused	1	1	1
	D5	Raw materials and finished goods that expire because they are not used / sold	3	3	9
System Risk	E1	The occurrence of disruptions in the system that cause the administration / transaction process to stop	2	1	2
	E2	The occurrence of disruptions in the system that cause the loss of company data	1	1	1
Risks of Delivery of finished goods	F1	Damage to the product or finished goods at the time of delivery	2	2	4
	F2	Loss of goods at the time of delivery	1	1	1
	F3	Car strike at the time of delivery of goods to the customer / customer	1	1	1
	F4	Car accident at the time of delivery due to the condition of the brakes not working properly	1	1	1
Environmental Risks	G1	Wetness / destruction of raw materials caused by flooding	1	5	5
	G2	Power outages that cause administrative processes to stop	2	2	4
Company Reputation Risk	H1	High complaints and returns of goods from customers due to the quality of goods that are not up to standard or contamination of the goods occurs	2	2	4
	H2	Polluted environmental areas of the company are caused by B3 waste	1	1	1
Risks of Handling B3 Waste	I1	Stacking of paper (sak) raw materials due to the collector not taking	1	1	1
	I2	Leakage of liquid or liquid raw materials to the warehouse floor	1	1	1

Table 2:- Assessment of Operational Risks at PT. AIJ

➤ Risk Matrix

After the risk assessment is carried out, the next stage is to make a risk mapping using the *Likelihood-impact Matrix* table, as shown below :

Likelihood	Probability	Severity				
	5					A4
4					D3	C3, C5
3				B1.D5		A2
2	A3, C2, D2, E1	A1, B2, B3, B4, D1	F1, G2, H1			
1	A5, C4, D4, E2	F2, F3, F4, H2, I1, I2				G1
	1	2	3	4	5	

Table 3:- Risk Mapping Table (*Likelihood*) in PT. AIJ

The table above has a description, namely: Color : Green = *Low Risk*, Yellow = *Medium Risk*, Red = *High Risk*.

When viewed from the risk assessment picture above, these risks can be categorized as follows:

A. *Low Risk*

The risk categories included in *Low Risk* are decreased employee performance (A1), Work accidents (A3), Incorrect inputting data (A5) Damage to machines at the time of production (B2), Standard *Operational Procedures* are not running (B3), Incorrectly entering the material baku during the production process (B4), The quality of the raw materials sent is not in accordance with the requested standards (C2), Error ordering raw materials (C4), Error in preparation of raw materials for the production process (D1), Non-conformity of the actual stock of goods with the stock that is programmed (D2), Damage to raw materials or finished goods in when storage is warehoused (D4), The occurrence of disruptions in the system that cause the administration / transaction process to stop (E1), the occurrence of disruptions in the system that cause the loss of company data (E2), Damage to the product or finished goods at the time of delivery (F1), Loss of goods at the time of delivery (F2), Breakdown of the car at the time of delivery of the goods to customer / customer (F3), Car accident at the time of delivery due to condy brakes not working properly (F4), Power outages that cause the administrative process to stop (G2), The high number of complaints and returns of goods from customers due to the quality of goods that are not in accordance with standards or contamination of the goods (H1), Polluted environmental

areas of the company caused by B3 (H2) waste, paper accumulation (sak) of raw materials due to collectors not taking (I1), Leakage of raw materials liquid or liquid to the warehouse floor (I2).

B. *Medium Risk*

The risk category yang included in the *Medium Risk* is the result of quarantine products (not according to standards) due to the production process (B1), raw materials and finished goods that expire because they are not used / sold (D5).

C. *High Risk*

The risk categories included in *High Risk* are Ineffective employee development strategy (A2), Employee satisfaction (Rewards & Punish) is not appropriate (A4), Arrival of raw materials is not on schedule has been set (C1), Single / one supplier (C3), Forecast inaccurate demand (C5), High *Buffer Stock* of goods exceeding warehouse capacity (D3), Wet / damaged raw materials caused by flooding (G1).

➤ Risk Control

After the risk assessment is carried out, the next stage of risk control is the steps taken to avoid risks, reduce risks, transfer risks and even accepting risks with appropriate controls of each risk. At this stage of risk control, researchers are only focused on level *High* and *Medium* which have a major impact on company losses. The way to control this risk is obtained from the results of interviews with the company's department.

Level	Number	Risk	Risk Control
High Risk	A2	Less effective employee development strategies	<ul style="list-style-type: none"> <li>• Make a training plan for each employee in a periodic way.</li> <li>• Require all departments to submit training plans at the end of each year.</li> </ul>
	A4	Employee Satisfaction (Reward & Punish) is not appropriate	<ul style="list-style-type: none"> <li>• Create and deploy an HRIS system</li> </ul>
	C1	The arrival of raw materials is not according to the schedule that has been set	<ul style="list-style-type: none"> <li>• Make a lead time agreement for raw material data.</li> <li>• Evaluate supplier performance</li> <li>• Make a <i>Punishment</i> agreement to the supplier.</li> </ul>
	C3	Single Supplier / One Supplier	<ul style="list-style-type: none"> <li>• Looking for raw material substitutions</li> <li>• Making policies each raw material must have a minimum of 2 suppliers</li> </ul>
	C5	Inaccurate forecasts	<ul style="list-style-type: none"> <li>• Make an agreement between PPIC and Marketing regarding forecast input</li> <li>• Create an ERP program</li> <li>• Evaluating marketing performance regarding raw material forecasts</li> </ul>
	D3	High <i>Buffer Stock</i> of goods exceeds warehouse capacity	<ul style="list-style-type: none"> <li>• Adjusting <i>the Stock buffer</i> to the warehouse capacity.</li> <li>• Evaluating the availability and adequacy of <i>Stock Buffers</i></li> </ul>
	G1	Wetness / damage to raw materials caused by flooding	<ul style="list-style-type: none"> <li>• Insures the entire assets of the enterprise.</li> <li>• Replaced a larger pump suctioning machine.</li> <li>• Carrying out palletizing on the raw material</li> </ul>
Medium Risk	B1	Quarantine product results (not according to standards) due to production process errors	<ul style="list-style-type: none"> <li>• Providing training to production employees</li> <li>• Update work procedures or instructions periodically.</li> <li>• Briefing at the time of starting work</li> </ul>
	D5	Raw Materials and Finished Goods that expire because they are not used or sold	<ul style="list-style-type: none"> <li>• Make a report on raw materials and finished goods once every 1 month.</li> <li>• Checking raw materials and finished goods every week.</li> <li>• Hold meetings on raw materials or finished goods that are carried out periodically.</li> </ul>

Table 4:- Risk Control

**V. CONCLUSIONS AND SUGGESTIONS**

Based on the results of research conducted at PT. AIJ, there are several ways of conclusions that can be drawn, namely:

- From the results of the research conducted, there are 31 risks that may occur in the company. The 31 risks are based on the company's operational risks including the risks of human resources, processes, procurement of raw materials, supervision of raw materials and finished goods, system, delivery of finished goods, environment, company reputation and handling of B3 waste.
- Conducting a risk assessment based on the level of impact and seen from the level of opportunity that is divided into 5 groups. The value of the risk is derived from the opportunity x impact. From the calculation of this value, the highest risk value was obtained, namely (A2) employee development strategies were ineffective,

- (A4) Employee satisfaction (Rewards & Punish) was not appropriate, (C1) Arrival raw materials do not comply with the predetermined schedule, (C3) Single supplier / one supplier, (C5) Inaccurate Forecast, (D3) High *Buffer Stock* of goods exceeding warehouse capacity, (G1) Wet / damage to raw materials caused by floods, (B1) Quarantine product results (not according to standards) due to production process errors, (D5) Raw materials and finished goods expired due to not used or dijual.
- Conduct risk management based on risk assessment. Based on the risk map, there are 5 risk levels including: *Very High, High, Medium, Low* and *Very Low*. There are several ways to manage risk, namely risk avoidance, risk restraint, risk diversification, risk control and risk marking. After completing the risk assessment, the researcher provides advice on handling risks as shown in the table above. The hope is that the handling of these risks will be more effective and efficient.

Based on the results of research and risk analysis that occurs in PT. AIJ, it is advisable to be able to implement *Enterprise Risk Management* (ERM), since using this method can be petrified to identify company risks arising from external and internal factors, then assist the company in assessing risks and managing risks that have an impact on large or small losses, so as to achieve the company's goals for profit and does not harm the company.

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