

Stock Risk Management Mitigation Strategy in the Transfer of Petroleum Work Management in Indonesia

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Abstract

This research aims to understand stock management, namely optimizing the combination of quality of goods, costs, and time, in this case, the availability of goods. House of Risk model risk management. Analyze and select a sequence of risks and determine mitigation strategies. The research method uses a qualitative approach that describes objective conditions in the field. Data collection techniques include interviews, observation, and documentation studies. Conclusion The analysis is used as a basis for the stock management mitigation strategy that will be taken. Determination of mitigation priorities is carried out to manage the allocation of required resources and control the emergence of risks. If existing mitigation efforts cannot solve the existing problem, the new company must change its mitigation strategy. A total of 34 risk events and 35 risk agents were identified when observing business processes. HOR-1 and the Pareto approach have been proven to be used to determine which risk agents should be prioritized for handling. Preventive actions are identified to reduce the negative impact of existing risks. HOR-2 succeeded in determining the ranking of preventive actions to be used to determine the mitigation strategy to be chosen.

Keywords: Mitigation Strategy, Stock Risk, Management Transfer

1. Introduction

The transfer of management involves different interests between the two companies. The management transfer process begins by preparing the transition carried out by Company A for the needs of Company B as follows. Manage Transfer Process). During the Termination period, investment in the form of stock is limited to meeting Company A's operational needs until the end of the oil operation rights. Various efforts have been made to ensure that new purchases (incoming stock) and existing stock will be used up before the transfer of management occurs, including by reducing parameters, narrowing the MRP range, and eliminating purchases that do not have a direct impact on work safety and production factors.

Operational control is fully controlled by Company A. The transition period aims to prepare the stock needed after the ex Company-C is handed over to Company B. Limited

transition time was a serious obstacle in stock management considering that several items required a very long lead time (long lead items). No less than 40-52 weeks (not including the tender process) is needed to produce several goods, for example, valves, pipes, and others. Resources in the transition period depend entirely on Company A. Sharing risks and responsibilities is a challenge in the transition process.

During the Transfer of Management period, operational power was completely taken over by Company-B as a new stage of the oil industry in Indonesia. The potential for stock unavailability (shortage) and various adjustments as a consequence of the transfer of management are the main challenges that must be prepared well. Stock management readiness in anticipating changes in standards and operating patterns is one of the keys to success in supporting the smooth and continuous transfer of management. Several differences regarding standards and operating patterns as a consequence of the transfer of management of Company-A to Company-B are identified in Table 1.1 (Potential Differences Post Transfer of Management) and changes in stock management patterns both in terms of quality, cost, and time (availability).

Handling various risks including in the SCM context, for example, Designing a Supply Chain Risk Mitigation Strategy at Company-D Nusantara Using the House of Risk Method (Utari, Baihaqi, 2015), Risk Management at Company-C to Face Supply Chain Uncertainty. Application of the House of Risk. Model to Mitigate Risks for the Gempol Pasuruan Toll Road Construction Project and Supply Risk Mitigation Analysis in Oil & Gas Company. By considering several previous studies related to risk mitigation efforts using the HOR method, this research is expected to produce risk mitigation strategies in stock management, especially in the context of the transfer of management of petroleum working areas in Indonesia. It is hoped that this research can also recommend control efforts for stock risks to ensure sustainable stock management.

2. Research methods

This research uses qualitative methods that describe events in the field by recording, measuring, intervening, and assessing, as well as drawing several conclusions to serve as a basis for continuing the research to completion.

2.1. Data collection technique

There are techniques for collecting in various ways, including through recommended techniques (Sugiyono., 2018). So that it fits the focus of the group discussion

- a. Observation of the research location by the request that has been submitted, to observe things that happen at the research location, observe, record, intervene, and reduce, so that the data obtained is by the research focus
- b. In-depth interviews with key sources, with various questions, to dig up as much information as possible, so that it can be compiled into valid data
- c. Documentation study to complete the data obtained above, in the form of documents, archives, and official records held by the office, which was attended by managers at the company

2.2. Data analysis

Using the House of Risk (HOR) model to manage risks that may arise in the supply chain, especially stock management. The main data source used comes from a survey via a questionnaire distributed to colleagues who are directly involved in supply chain activities,

especially in managing inventory or not (for example user elements, planning section, finance section, warehouse section, goods providers, or suppliers, and so forth.

2.3. Risk Identification

Identification of potential risks due to existing changes is carried out by observing the stock management process as a whole. The focus of observation is carried out by referring to the grouping of activities as in the Stock Management Business Process. The identification stage was then completed by conducting interviews with actors who were directly involved in various activities in the stock management business process.

3. Results and Discussion

3.1. Risk Analysis Strategy for Stock Risk Management in Petroleum Management Transfer

Based on the various risks that have been identified, companies must carefully plan the responses they will take. Broadly speaking, stock management risk management efforts that should be considered are divided into four groups, namely reducing the possibility of an increasingly severe impact (mitigation) or taking precautions before the risk occurs, doing nothing (acceptance), transferring the impact of the risk to another party (transference). and avoiding risks (avoidance).

This planning depends on the perspective of how the company views the risk agent that causes the risk event. Of the 34 risk events identified, one of them is (E20) Prices of expensive goods above market, which should be considered for acceptance by Company B if this is considered a consequence of (A27) Requirements above standard/non-standard compared to goods available on the market or international standards applicable in the petroleum industry (American Petroleum Association) in general.

Therefore, not many manufacturers can supply the required goods and the law of scarcity will apply. This is in line with the results of the questionnaire where based on respondents' perceptions, E20 does not cause serious severity for stock management purposes and can be interpreted as being considered reasonable. However, if from an expensive perspective, the price is considered to be caused by other things, for example (A25) The estimated price (budget) does not reflect market prices, (A19) The tender planning was not prepared in advance, (A26).

The implementation of the tender was outside the plan which resulted in insufficient time for new production so we had to look for ready-made goods which were usually used by suppliers to get more profits due to urgency and other factors, of course Company-B needs to plan mitigation efforts along with other risk events.

The response to transferring risk to other parties that can be considered is (E28) Uncertainty of delivery time (transit lead time) and (E29), barges, and non-standard trucks are not permitted to enter the company area. Both risks are transferred to the Supplier by agreeing on a delivery date in the purchase order document. Suppliers must ensure that the mode of transportation they use is reliable both in terms of time and conditions. Risk response planning is also influenced by the organization's priorities and experience.

During periods of pressured stock management due to having to provide stock for high operational activities (9 rigs operating simultaneously) and dynamic activities, the priority chosen is the availability of goods and it is only natural that Severity (E7) Excess stock and (E25) Purchase Orders (commitments) that have been awarded cannot be canceled look lower (E7: 2.82 and E25: 2.73) compared to other risk events.

The Aggregate Risk Potential (ARP) value shows the relationship between the risk event and the risk agent which is calculated based on the level of severity and occurrence. ARP is used to determine the risk agent ranking of identified risk events. Pareto analysis is carried out to group risk agents into 3 priority groups (A, B, and C). Group A represents 80% of the cumulative ARP indicating the main risk agent that needs priority treatment.

A total of 19 risk agents are included in group A while groups B and C are 10 and 6 respectively. Group A as a priority in this research consists of (A16) Changes in schedule/number/priority of operations, for example, drilling activities, and (A17) Changes in design. (bill of material)/technical standards (specification), (A31) Approval of the master list is not according to plan/rejected, (A21) Needs creation (Rsv/WO) is not controlled properly, (A28) The new factory qualification process takes a long time, (A26) Implementation of tenders outside the plan, (A18) Reservations, Work Orders are canceled/modified unilaterally, (A1) Information is not the same in all parts, (A15) Long learning curve including potential errors from changes to new systems such as ERP (SAP- Prisma), valuation type, etc.,

(A29) Supplier does not understand the technical requirements (company specification), (A4) Changes in stock data are not immediately corrected in the system, (A19) Tender planning is not prepared well in advance, (A30) Quality requirements (technical requirements) cannot be met by the Supplier, (A34) Goods are stored incorrectly, (A5) Stock returns, for example from the rig is not immediately re-integrated, (A27) Above/non-standard requirements, (A24) Unclear scope of work (SoW), (A25) and (A14) Requirements planning errors due to non-technical factors such as inaccuracy, negligence, ignorance, etc.

3.2. Preventive Action Risk Analysis Strategy Stock Risk Management in Petroleum Management Transfer

Based on several risk agents that are priorities to be handled, identification efforts to find appropriate mitigation efforts are carried out to avoid the negative impacts of risks and control the occurrence of risks. The mitigation strategy that will be taken must consider the effectiveness of the mitigation efforts undertaken and the resources needed to implement the chosen strategy. HOR2 is used to determine the ranking of preventive actions that will be carried out. The preventive action ranking is determined based on the order of Company values, namely the ratio of total effectiveness to difficulty.

The greater the Company value, the greater the hope that the selected mitigation can effectively overcome the risks faced as Preventive Action Data Analysis. Choosing the right mitigation is expected to reduce the potential for risk agents to occur, which means it will reduce the occurrence of risk events. The company's ability to allocate its resources is very important in ensuring the success of the expected mitigation results. The difficulty value can be interpreted as the amount of resources needed to overcome risks.

The preventive action rating shows a combination of how effectively the steps taken can overcome various risks and how much resources are needed to implement these steps. How much the effectiveness of preventive action is influenced by the value of relationships in handling one risk agent or handling various risk agents that exist together.

The higher the preventive action value, the greater the opportunity for the company to minimize the impact of risks. The higher the preventive action rating means the company can respond to existing risks by choosing appropriate mitigation steps. On the other hand, the lower the preventive action rating, the 66 mitigation steps chosen cannot answer the need to deal with existing risks and the company needs to think about other responses in dealing with existing risks, for example, transference, acceptance, and even avoidance.

For example, (P27) Consistent application of sanctions for tardiness is ranked 34 or the lowest. In Appendix E, the HOR-2 Model shows that the preventive action relationship is an

effort to overcome (A30) Quality requirements (technical requirements) that cannot be met by the Supplier. As a response to existing risks, the company has the option to accept (accept) risk (E30). Goods are received late if the cause of the delay is because the goods requested are not standard so there is no other choice but to wait for a longer production time or avoid (avoidance) by replacing technical specifications according to existing standards.

3.3. Preventive Action in Quadrant Strategy Stock Risk Management in Petroleum Management Transfer

Preventive action in quadrant 1, is not effective in overcoming risks but can be used to improve stock management performance. It doesn't require a lot of resources, but the selection must still be careful so that the company still has the flexibility to choose 67 preventive actions from quadrant #3 that are more effective in dealing with risks.

- a. Preventive actions included in quadrant #2 are very effective in overcoming risks and do not require a lot of resources or can use existing resources. So it is worth choosing as the main strategy for overcoming existing risks. The combination of the availability of the required resources and the effectiveness of the results obtained will help the company minimize the negative impact of risk in achieving stock management objectives.
- b. It requires large resources or even investment in additional resources to carry out various preventive actions in quadrant #3. The opportunity to be able to overcome risks is greater, especially by running P6.
- c. The selection of preventive actions in quadrant #4 must be done very carefully and limited, especially in implementing P8 (not effective but requires large resources). However, in some acceptable conditions, such as the drawing of points that approach the intersection of the severity line and the Company, preventive action can be taken only when the company has sufficient resources.

4. Conclusions and recommendations

4.1. Conclusion

It was possible to identify as many as 34 risk events (E_i) and 35 risk agents (A_i) that could potentially disrupt stock management objectives in contributing to maintaining continuity in the transfer of management of petroleum working areas.

(A16) Changes in schedule/quantity/priority of operations, for example, drilling activities, (A17) changes in design/technical standards, (A21) needs creation (Rsv/WO) not controlled properly and (A26) implementation of tenders outside the plan are some of the risks involved. traditionally observed and watched out for in carrying out stock management, however, several other risks arise that need to be taken into account, for example (A31) approval of the master list is not according to plan/rejected and (A28) the qualification process for new manufacturers takes a long time.

The HOR1 model was proven successful in determining the ranking of 35 risk agents based on their severity level and occurrence level. So that risk handling can be carried out effectively, Pareto analysis is carried out to narrow down the risk agents whose handling needs to be prioritized based on the aggregate risk potential (ARP) value ranking. A total of 19 risk agents namely A16, A17, A31, A21, A28, A26, A18, A1, (A15), A29, A4, A19, A30, A34, A5, A27, A24, A25, and A14 are included in the cumulative list of 80% ARP as a basis for determining handling priorities.

A total of 34 preventive actions (Pi) were identified to minimize the impact of 19 priority risk agents. Limited resources often become an obstacle for companies in mitigating risks. HOR 2 is used to help companies allocate limited resources so that they can be used efficiently.

By successfully determining the preventive action ranking based on HOR 2, Company-B can formulate risk mitigation strategies that must be taken to minimize the impact caused by risk agents or even control the emergence of risk agents which can interfere with stock management objectives in contributing to maintaining the smoothness and sustainability of the oil work area management transfer process as follows:

- a. Various preventive actions in quadrant #2 (P17, P7, P1, P2, P34, P18, and P29) and P6 which come from quadrant 3 have a high level of effectiveness in overcoming existing risks. This preventive action should be chosen as the main stock management risk mitigation strategy.
- b. Company B must be able to manage its resources well so that P3, P22, and P20 (quadrant #3) can be included as part of the risk management mitigation strategy.
- c. This does not mean that mitigation that is easy to implement must be implemented immediately (quadrant 1) and conversely, difficult mitigation is postponed or not even implemented (quadrant 3).

4.2. Suggestion

Based on observations during research and discussion and the results of existing analysis, several suggestions can be drawn, namely as follows:

- a. For company A to be able to complete it by measuring the costs or investment required to carry out the selected mitigation strategy when its resources are insufficient, for example in the quadrant
- b. For managers, this is something that decision-makers always ask when holding meetings to determine strategic steps.
- c. For Subcontractors to find the right method for measuring the balance of resource allocation needed to carry out preventive actions that provide high-effectiveness results but require a lot of resources (quadrant 3) with low effectiveness results but only require a few resources (quadrant 1). It is hoped that all preventive actions will be in the quadrant

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