IMPLEMENTING ETHICAL DECISION MAKING PROCESS TO PROJECT AMENDMENT CONTRACT

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Abstract - Ethics is a good and a bad standard of personal characteristic. Ethics in projects needed to produce better quality projects. Many paper said unethical actions on the project can cause a huge over budget and also fraud called corruption. Thus, the project manager must produce decisions that are in accordance with the required guidelines, and then ethics must be taken in to it. In this study, ethical decision making process is implemented by combining decision tree diagram in a Telecommunication Project. This project has many changes especially contract amendments. Why amendments to the contract? Because managing time is the most prominent source of project limitations. Most of the Telco projects are late and complex. The result shows that using ethical decision making process and collecting data for developing decision tree diagram can make more robust solution and better decision.

Keywords - Decision Making Process, Risk, Decision Tree Diagram, Amendment Contract, Risk

I. INTRODUCTION

The project cannot be separated from risk. The risks in the project are divided into positive risks and negative risks. Positive risk is known as opportunity and it is useful in increasing revenue while negative risk is a risk that can disrupt in achieving project goals. Negative risks must be avoided by project managers while positive risks must be optimized in order to make a profit.

The risks in the project must be managed properly. In PMBOK [1], project risk must be identified as early as possible and should even be the main topic in the project's daily meeting. A series of project risk management projects must be observed and implemented as well as possible to avoid project failure because project risk is the responsibility of a project manager

One of the main risks in the project is ethical issue. Ethics is a good and bad standard in person. Ethics in projects are needed to improving the quality projects. According to LugoSantiago [2] unethical actions on projects may produce the big increase in costs for instance the misuses of budget or corruption. Corruption is an extraordinary act of depravity because the effects of acts of corruption can trigger the ore various problems and even criminal acts in them such as social inequality, poverty, destruction of the natural environment, rights taken, increasing levels of crime, human safety and so on.

What is the connection between unethical actions in the project? Unethical behavior in the project can produce two main effects. First, unethical behavior can damage the organization. As explained earlier that basically unethical actions cause cost overruns both in short and long term period. In addition, unethical behavior can reduce the enthusiasm of the project team in carrying out project activities.

What is the relationship between unethical actions and the motivation and enthusiasm of the project team? Both of these things have very strong roles. In the concept of project leadership, the influence of the project manager in leading the project can cause successful project. Project managers can control the project. Project team will follow the project manager's direction due to trust in the project manager. Hence, unethical actions can distract the ability of the company and people at completing the task or works.

Unethical actions do not recognize the size of the project, it could occur in relatively small contract value until large contract value. This is one of the main reasons why organizations must care about having excellent leadership at the top of project leaders and program management. Great people who do what is right and honorable can penetrate those behaviors throughout the organization, including influencing actions outside the organization such as partners, vendors or project suppliers. Blake Ashford and Vikas Anand [3] noted in their research that leadership plays a major role in normalizing behavior in an organization. Therefore, projected ethical actions begin with the leader himself. If the leader is already ethical, it is very likely that his/her subordinates will follow the leader's actions.

Naturally, decision making is inevitable in project managers task [4]. Not all choices are easy to decide, not everything that can be done quickly to be chosen, as consequence the project manager must undergo several analysis in the decision making process. Most decisions are taken from the interests of the organization or stakeholders. Decision making is becoming complex because there are decision factors that come from them. The higher the level of success, the higher the level of difficulty. In every decision making, it always deal with the environment, where one of the characteristics that most complicated in the decision-making process is approval or agreement [5].

In this study, the framework for project decision making will be developed by taking a case study of project contract amendments. Why amendments to the contract? Because time is the main source of project limitations. According to interview from Telco Company, Most of the Telco projects are late and difficult to manage time. This triggered a contract change request which is called contract amendment. This framework will be developed with regard to technical aspects that need to be considered when making decisions.

An ethical standard of decision making is needed to eliminate ethical dilemma. The Ethical Dilemma when dealing with amendments will be "Does agreeing on an amendment request not reduce the scope of the project? "Does approving the request for amendment to the contract not neglect the impression of underestimating the work? Does approving the contract amendments not justify the vendor's actions that are not performing in the completion of the task?

Tree decision making is one method that can simplify complex problems in a simple graphic model. Compared to the Monte Carlo method, decision trees are very relevant to everyday problems not to complex problems [6]. The ethical decision process will combine the tree diagram method in producing better decision and also more easy interpretation.

II. LITERATURE REVIEW

A. Code of Ethic Project

Basically project management will be filled by activities called decision making. According to PMBOK, most activities that will be spent by project manager is almost 90% by negotiating and communicating [1]. A PM will be spent in making decisions where the intensity can reach almost tens of times a day. Some decisions are small and hardly noticed while others are stand out. Some decision-making actions require deep thinking because they involve people, resources, and the environment. These factors sometimes may encounter conflicts among party, create several dilemmas and perhaps cause significant risk.

The role of PM is a key leader in achieving project success. Basically the essence of leadership is trust [7] without trust, no followers. The speed of building trust in relationships can be achieved by acting ethically.

The project ethics is taken from the code of ethics issued by PMI including 4 aspects which are Responsibility, Fairness, Respect, and Honesty. Responsibility means the project manager must be able to accept all the consequences of the decisions taken, both decisions that may succeed or fail. Respect means showing high respect for ourselves, others, and the resources entrusted to us. The resources entrusted shall have people, money, reputation, other people's safety, and natural or environmental resources [8].

Fairness means making decisions and acting impartially and objectively. Fairness is also a behavior which has no preference to take the opportunity of the personal interest, a competition and also take one party. Trust means understand the truth and act in the right way both in communication and how to behave [8].

B. Decision Making Framework

In a study conducted by Smith (1993) [4], a decision tree is applied in a case where a project manager will take a decision. Some steps to do are as follows:

1. Is the decision important?
2. Is the decision supported by representative data?
3. Does implementing the decision require recognition from the other party?
4. Will the other party accept the decision even without their involvement?
5. Will the parties that enter into the influence of the decision share the objectives of the organization?
6. When making decisions there are several types that can be used:
7. Style 1: The Project Manager decides on his own decision
8. Style 2: the project manager can ask for input from work staff and colleagues and can still decide on his own decisions
9. Style 3: Project managers and staff can make decisions
10. Style 4: Project Manager can delegate decisions to other parties
11. Briefly S1can be coded as "itself", S2 as "input", S3 as collaboration and S4 as delegate.

C. Ethical Decision Making

When making decisions on a project, not all will be black and white solution. There are times when it is in a gray position. This will lead to the condition of the dilemma, is this correct and effective decision? Or will it be against the law in the future? In the book by Howard and Abbas [9], the decision has 4 dimensions including Ethical, Legal and Prudential.

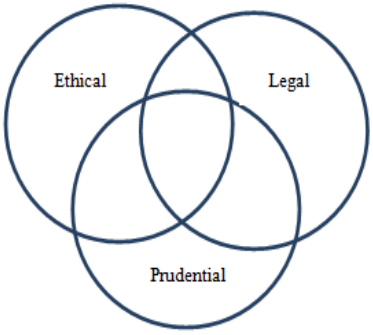


Figure 1 classification of situations based on Ethical, Legal and Prudential [9]

From Figure 1, legal aspect means the decision is truly safe from the legality aspect for example not taking bribes. The ethical aspect is an aspect when the decision is correct in reason behind it but it is not necessarily legally correct, while Prudential's decision means decision which is not necessarily categorized both ethical and legal. On top of that, the decision can be gray, not black and white, and has a different side. Ethical decisions must adhere to the following principles for example:
Reciprocity: can every rule apply to you?
Universality: does every rule apply to all?
Consistency: does the system of rules act consistently and logically?
Actualization: is the rule accompanied by a guide?

III. METHODOLOGY

Decision making in projects is interesting because the project itself is something unique and different. In this study a decision-making framework will be developed by taking a case study of amendments to telecommunication project contracts. When deciding to extend a contract, the project manager will encounter a dilemma. Decisions are difficult because they relate to existing resources and the project's objectives themselves. The object of this research is FTTH telecommunications projects or fiber optic installations in Bandung.
PMI had designed a decision-making framework known as EDMF. EDMF contains five steps [10]. Facts about ethical dilemmas are collected before using EDMF. As shown in Figure 3, it involves analyzing facts about ethical dilemmas, considering alternative choices, identifying and analyzing alternative decisions, applying ethical principles to alternative decisions and finally making those decisions.
This framework will be used in this research but unfortunately the detail tools or technique in every stage is not clearly mentioned especially in assessment process and analysis. These processes are important when selecting the decision. Thus in assessment stage, the further assessment will be used by taking decision principle. In this stage, the type of decision is also identified whether it has big influence toward stakeholder.

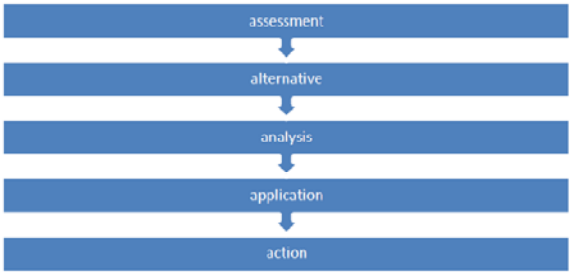


Figure 2 Ethical Framework Decision [10]

For analysis stage, the quantitative risk analysis is used to give more robust solution. The entire generated decision alternative will be analysis by their impact and also their occurrences. This method is called expected monetary value. The calculation will be illustrated by tree diagram to ease the visual interpretation. The smallest value indicated the lowest consequence since the impact is about schedule. Thus the end criterion is selecting the smallest EMV.

IV. RESULT AND DISCUSSION

The Telecommunications Project which is being carried out in Bandung is the installation of an optical network. This project takes process of rejuvenating the copper cable network that will be replaced by an optical network. One of the project network installation projects is the FTTH development project.
There were only 40% of the projects are successful, and the rest were fail. The project also experienced several obstacles such as multiple amendments. The STO modernization project is part of the FTTH project. The STO modernization project is predicted to undergo an amendment. Nevertheless, the submission of amendment is too late. They conducted the amendment before closing the project.
Hence, the final decision of amendment can be made by a deep analysis using ethical decision framework will help the quality of the decision.

A. Assessment

1. Deciding critical decisions or not.
Contract amendments are important for vendors because it will determine when a project may finish. Thus, it is also important for the project owner to determine when a product can be used. Amendments can be given if there are external risk factors that cannot be controlled at the beginning of time. In this project, the amendment was triggered by difficult permit (external factor) as consequence the amendments should be made immediately.

2. Adequate Data
At this stage, amendment decision will be assessed whether it is supported by facts. As mentioned earlier, there is an external risk that appears when delivery the project material and also licensing process is difficult problem. The type of decision is S2

3. Acceptance
Does the decision require acceptance or the willingness of others to carry out the decision? Of course it will require an acceptance. If anyone who gets a task in the project is unwilling to accept it, he/she is unlikely to be fully productive in completing the works. This does not mean always asking if someone wants to do a particular task. In this case the decision maker must be convinced that the amendment decision requires acceptance among all stakeholder. The type of decision is S2, S3

4. Participation
Contract amendments require analysis from various parties, especially the project team and fellow project

managers. Input from them will be considered in decision making. So the type of decision is S2

5. Commitments

Amendments require comprehensive participation and communication. All entities need to know the results of decisions and participation in decision making. In brief this decision can be classified as types of decisions S1, S2 and S3. This decision cannot be delegated to any party.

This first step includes questions relating to many dilemmas: "Is it in harmony with ethical values and cultural values?". In this step the decision holders will experience confusion. From EDMF itself it is not clearly explained how to filter out a decision somewhat free from ethical dilemma. The principle of ethical decisions proposed by Howard and Abbas [9] can be applied to this phase so as to facilitate decision making. If there is one that is not fulfilled then the decision needs to need revision before continuing to the next phase.

Reciprocity: can any application rules for project contract amendments be applied to yourself?
Answer: yes

Universality: does every rule for requesting project contract amendments apply to all vendors?
Answer: yes

Consistency: can the system for requesting amendments to project contracts be carried out logically and consistently?
Answer: yes

Actualization: does the rule apply for amending the project contract?
Answer: yes

Furthermore, it can be analyzed into the next phase, which is to determine alternatives to contract amendments

B. **Alternative**

In this step, the alternatives will be analyzed from a decision. This second step asks, "Have you made a list of possible alternative options?" And "Have you considered the pros and cons of each choice? The alternative to contract amendments is to apply fines for each delay. This fine decision will still be evaluated:

Reciprocity: can any rules for late project penalties be applied to yourself?
Answer: yes

Universality: does every rule of project delay fine apply to all vendors?
Answer: yes

Consistency: can the system of fine rules for project delays be made logically and consistently?
Answer: yes

Actualization: do you have rules for late project penalties?
Answer: yes

After identifying alternatives, the next step is further analysis of each decision.

C. Analysis

At this stage, the validity of each alternative decisions both the main decision and the alternatives are tested. Mathematical calculations can make a decision more valid. Content validity can be proven by calculating existing outcomes in each alternative. For example an analysis of the risks and costs of each alternative is carried out.

After classifying the type of decision, then identify their risks as well as the consequences. First, if there is no amendment, then the alternative is the partner will get penalized because the work is not extended; the second is the addition of work. The impact is duration of the project also increases. Thus there are 3 decisions impact that corresponds to contract amendment.

Opportunities for these three alternatives are obtained by collecting historical data on FTTH projects. There are 7 projects that had been completed and every project had experienced an incident from that alternative. All projects were late from initial schedule as written in the contract. The data can be seen from the Table I.

No	Project Name	% Current Progress	% Planning	remark
1	Feeder Installation	96,19%	100%	delay
2	OSP-FO AKSES 2014	64,48%	100%	delay
3	OSP and FTTH Installation	94,80%	100%	delay
4	SP FTM 42 STO	99,89%	100%	delay
5	OSP-FO installation SP#2	66,29%	100%	delay
6	Granular Modernization - OSP-FO	83,08%	100%	delay
7	FTTH PT 3	41,17%	100%	delay

Table 1 Telecommunication Project 2018

The risk that has the biggest impact among three alternatives is the delay. The risk of delay is divided into 4 category, the first ne is no delay, long delay

(represented by 120 days), medium delay (represented by 60 days) and short delay.
After grouping the delay type, the upcoming process is calculating the cost of each type. The average daily costs are Rp. 350,000 so if the project duration 30 days, then the total cost can be obtained by multiplying the total duration and also cost which is Rp. 10,500,000. The further detail of cost impact can be seen at Table 2

Delay Outcome	day	Cost
No Delay	0	0
Long Delay	120	IDR42.000.000
Medium Delay	60	IDR21.000.000
Short Delay	30	IDR10.500.000

Table 2 Cost Consequences

After calculating the cost of each delay category, then multiply the cost by its probability. The delay probability can be produced by identifying the data of 7 projects that occur in 2018.

The three alternatives are calculated as expected monetary value. The alternative chosen is an alternative that has the smallest total EMV because the consequences taken are costs. For amendments alternative, the total value of the EMV is IDR 18,165,000. For the second alternative which is giving penalties, the EMV value is IDR 22,680,000 and the last alternative which is cutting scope, the EMV is IDR 31,500,000. Out of three alternatives, the amendment is the best decision because it produces the smallest EMV value (see figure 3).

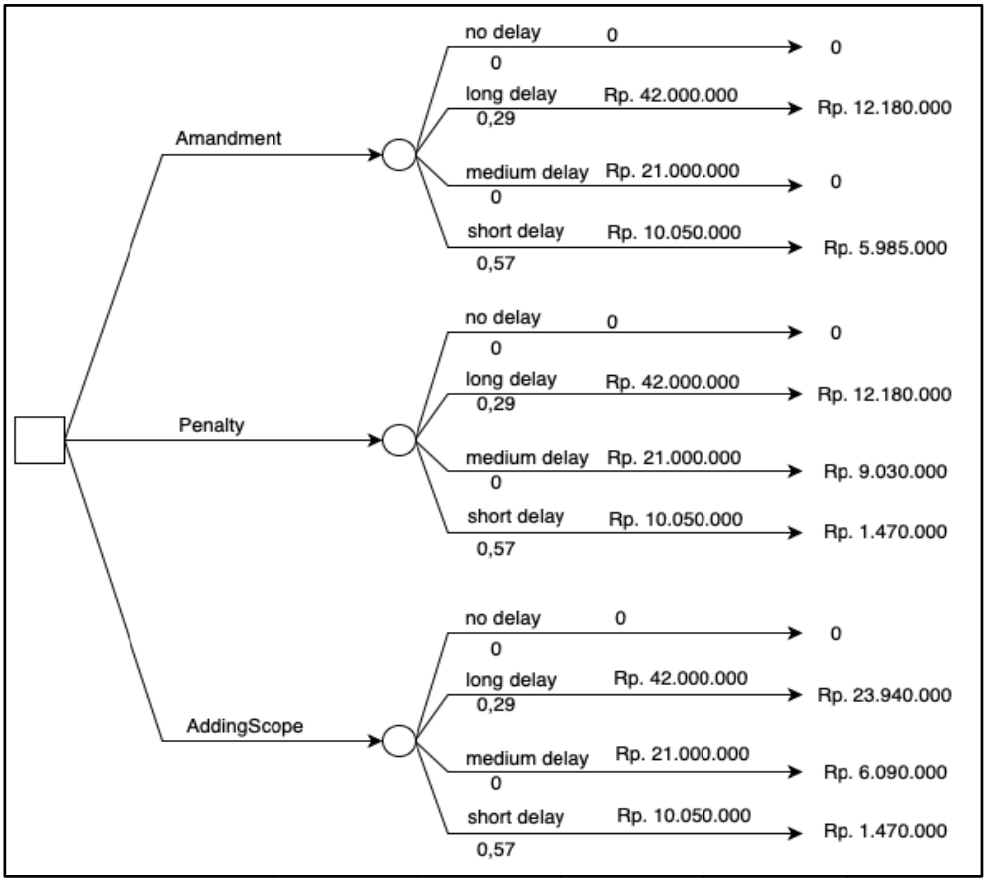


Figure 3 Decision Tree Analysis

D. Application

At this stage, ethical principles will be applied for decisions. This fourth step refers to several dominant ethical theories such as "Will your choices produce benefits for many people?" The contract amendments will inevitably extend the duration of the work but there are several entities involved in it. In addition, this decision will have huge impact on some people both vendors and project owners.

E. Action

The last stage is to make a decision based on several considerations from the previous stage. This fifth step includes challenging questions. "Are the decision holders willing to accept responsibility for the request for amendment to the contract?" "Can the decision maker make an open decision and feel happy about it?" These questions require consequential evaluation, not only from the decision itself, but also the impact

resulting from a decision. The impact that results from each decision can be emotional, social and professional, making sure that every decision can be accounted for in accordance with the code of ethics of a project manager, namely responsibility.

Delay Outome	Amandemen			Penalty			Adding Scope		
	Prob	Delay Cost	EMV= Prob. X Cost	Prob	Delay Cost	EMV= Prob. X Cost	Prob	Delay Cost	EMV= Prob. X Cost
No Delay	0	IDR0	IDR0	0,14	IDR0	IDR0	0	IDR0	IDR0
Long Delay	0,29	IDR42.000	IDR12.180.	0,29	IDR42.000	IDR12.180	0,57	IDR42.000	IDR23.940
Medium Delay	0	IDR21.000	IDR0	0,43	IDR21.000	IDR9.030	0,29	IDR21.000	IDR6.090
Short Delay	0,57	IDR10.500	IDR5.985	0,14	IDR10.500	IDR1.470	0,14	IDR10.500	IDR1.470

Table 3 Expected Monetary Value Calculation (in million Rupiah)

V. CONCLUSION

Many aspects must be considered when making decisions. A framework is needed so that decision making is more directed and in line with applicable ethics. The framework will be an alternative guidance for project managers to decide solutions that are in accordance with existing ethics and focus on problems.

Basically the Decision Tree analysis is able to help decision makers in simplifying a case to even complex cases [11]. Contract amendment is a complex and important decision for the project because it involves the interests of two parties, such as the vendor and the owner of the project. Decision making with a focus on project risk factors will make the project manager may anticipate all the risks that can damage the project's objectives.

In the risk assessment there are 2 analyzes that focus on two different things, namely subjective assessment and numerical assessment or quantitative assessment. Quantitative assessment provides more accurate assessment. Since the project is an activity that is temporary and unique, project manager may encounter difficulties in collecting the data for EMV.

Decision tree analysis will has bias result if the project does not have good data management capabilities. Basically the project is independent, it has no relation between one and another that will trigger the accuracy of the data [12]. In the end, as reviewed by Virine [13], it is somewhat difficult to find the probability and opportunities in the project especially with regard to decision making. For this reason, this research needs to be completed with other relevant data

The uncertainty of the project is very high so it will be difficult for decision making process if the risk is not well recognized. Virine [13] emphasized that at the end the project manager would tend to play with his intuition when running the project rather than systematically taking into account such as the application of the analysis decision tree in decision making.

Project amendment decisions is taken as the case study of decision making process, to find out whether this framework can be used in other cases, others project is suggested to be investigated. By implementing this decision framework in other fields, further advantage of this framework can be proven.

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