Assumption of Risk: Who Takes Responsibility? Owner? Contractor? Or the Party Best Able to Manage the Risk?[1, 2]

Marie Osée Tchoyo Agoume

ABSTRACT

Appropriate risk management in projects counts for at least 50% of its success. As such, clearly identifying, qualifying, determining the risk probability and giving adequate responses is the base for risk management. However, attributing a risk responsibility between present parties i.e. the owner and the contractor will enable a better control of the risk. The aim of this paper is to show who takes responsibility of a risk between the owner and the contractor. The owner and the contractor can either assume all risk solely, they can share the risk evenly or split it based on which party can best manage the risk. The result of the analyses carried out shows that, it is better to split the risk based on who is best able to manage it or share the risk among both parties, depending on the type of contract and risk. The paper goes further to give some recommendations on how to reduce risk occurrence.

Keywords: Risk management**,** Contractor responsibility**,** Owner responsibility**,** Project risks**,** Responsibility**,** Risks**,** Parties, Contractor and owner responsibilities**,** Best able to manage

INTRODUCTION

It is a natural tendency to worry about risks. The PMI define risks as "an uncertain event or condition that, if it occurs, has a positive or negative effect on a project's objectives." Therefore, to successfully manage a risk, it must first be identified, assessed, prioritized and later acted for. So, identifying risks in projects helps the project manager to anticipate responses or avoid bad scenarios, that might lead to an early closure of the project. A clear risk

[1] Editor's note: Student papers are authored by graduate or undergraduate students based on coursework at accredited universities or training programs. This paper was prepared as a deliverable for the course "International Contract Management" facilitated by Dr Paul D. Giammalvo of PT Mitratata Citragraha, Jakarta, Indonesia as an Adjunct Professor under contract to SKEMA Business School for the program Master of Science in Project and Programme Management and Business Development. http://www.skema.edu/programmes/masters-of-science. For more information on this global program (Lille and Paris in France; Belo Horizonte in Brazil), contact Dr Paul Gardiner, Global Programme Director, at paul.gardiner@skema.edu.

[2] How to cite this paper: Tchoyo Agoume, M. O. (2018). Assumption of Risk: Who Takes Responsibility? Owner? Contractor? Or the Party Best Able to Manage the Risk? *PM World Journal*, Volume VII, Issue X - October.

owner and risk "actionee"[3] should therefore be identify, to better attribute responsibility between the owner and the contractor.

"A project owner bears the owner rights and owner responsibilities of the project"[4]. The business dictionary defines the contractor as an independent entity that agrees to furnish certain number or quantity of goods, to another independent entity called project owner. As such, there are generally at least two parties in contracts, and depending on the risk type, one or both parties take responsibility, as risks could be potential loss for the project. This can either be the contractor or the project owner.

Moreover, "Project success depends, among other factors, on the ability to successfully manage the interaction between the key stakeholders—namely, the project owners and management team of each project"[5]. It is therefore not bold to say project success highly depend on the ability of both the contractor and the owner to take appropriate corrective actions vis-à-vis a risk in a project, to help reduce its chances of occurring.

However, should the risk occur, someone must take responsibility for it. The project owner or the contractor? The aim of this paper is to answer the following questions:

- What are the limits of the owner's responsibility in risk management?
- What are the limits of the contractor's responsibility?
- In which case both parties can manage risk together based on who can best manage the risk?
- In which case can both parties they can split the risk?
- What actions should be taken to reduce risk occurrence on both the contractor and the owner side?

The above questions can be summarized into two main questions: Should risk occur in projects, who takes responsibility?

The expected result of this paper is, on the one hand to show the responsibility of each party in risk management approach and on the second hand, to recommend preventive actions to reduce risk for each party.

METHODOLOGY

Having raised the above problematic, this section will focus on using the Multiple Attribute Decision Model (MADM) method ("a process for making preference decisions over the

[3] The Risk Actionee is someone who is assigned to carry out a particular action and they support the Risk Owner. (PRINCE2 wiki)
[4] Olsson, N., & Berg-Johansen, G. (2015). Project ownership in theory and practice. Project owners type 1 and type 2.
[5] Krane, H. P., Olsson, N. O. E., & Rolstadås, A. (2012). How project manager-project owner interaction can work within and influence project risk management - (Turner & Mueller, 2004)

available alternatives which are characterized by multiple (usually conflicting) attributes are useful for improving decision making in a wide range of circumstances from professional to managerial to political")[6], to determine who takes responsibility for risks, should it occur, based on identified feasibility alternatives and attributes.

The feasibility alternative will then be opposed to the attributes in a matrix analysis, and as criterion, this paper will not consider any feasible alternative that does not have at least one green box. The selected options will therefore be based on the criteria with at least one green box, consider green equals excellent, orange equals good, yellow equals fair and red equals poor.

We will go further to use the quantifying and compensatory methods of the MADM in our findings. In the quantifying method, we will consider the following figures: 1=excellent, 0.67= good, 0.33= fair and 0.00= poor. In the compensatory method, we will first rank the attributes, then divide the total attribute by the given rank to have the normalised weight. We will then proceed by multiplying the normalised weight with each feasibility alternative to get the weight of each option and hence make a choice. Still in our findings, we will explain the obtained result.

Therefore, to determine who takes responsibility in risk management between the contractor and the owner, we are going to consider five feasibility alternatives and six attributes. Let's start by the feasibility alternatives.

Step 2- Identify the Feasible Alternative SOLUTIONS to the Problem Statement from Step 1

The feasible alternatives are:

1) Contractor Assumes All Risks
2) Owner Assumes All Risks
3) Owner and Contractor SHARE all Risks Evenly
4) Owner and Contractor SPLIT the risks based on who is best able to manage them

The attributes are:

1) Ability to identify
2) Ability to quantify
3) Ability to determine probability
4) Ability to control
5) Ability to implement STRATEGIC responses
6) Ability to implement TACTICAL responses

[6] K. Paul Yoon, & Ching-Lai Hwang. (n.d.). Multiple Attribute Decision Making | SAGE Publications Inc.

Step 3- Development of the feasible alternatives

a. Contractor Assumes All Risks

Generally known as CAR (contractor all risk), this feasibility alternative suggests that the contractor take all responsibility for the risks. He is however covered by the CAR insurance, provided the risk occurs during a period of 72 successive hours, caused by a natural disaster. In case of total loss, the contractor will not be totally covered. He will bear part of the responsibility and pay for the loss and damage. In case of repairable damage, the contractor will be covered, provided the damage is not less salvage.

b. Owner Assumes All Risks

One of the main function of the owner in a project is to assume and manage all risks. This is whether he directly manages the project or confides it to the contractor, as the contractor remains under his supervision. This alternative implies that the owner assumes all the project risk, manages it, and give adequate responses. The owner is solely responsible for the risk. "It is the owner's responsibility to ensure that project risks are rigorously and aggressively managed and reviewed by senior managers in each of the project phases"[7]

c. Owner and Contractor SHARE all Risks Evenly

Depending on the risk type, both the owner and the contractor take responsibility for the risk by sharing it. This generally occurs when both the owner and the contractor agree to share a loss due to a risk occurrence. This usually happens when both parties are co-investors in a project or in joint ventures. An example of risk sharing can be in the case of a percentage pro-rata, where gains and losses are shared among the owner and the contractor.

d. Owner and Contractor SPLIT the risks based on who is best able to manage them

Here, both the contractor and the owner must anticipate the different project risks and decide whether they should manage it or allocates its responsibility to the party best able to manage it. For example, if a worker is hurt by an object on the construction site, the owner will attribute the risk to the contractor because he is in a better position to manage this risk and is responsible for safety on the working site. Also, if there is a design error, the contractor will attribute the responsibility to the owner, who decides of the design with the architects and is in a better position to reduce the risk.

[7] The National Academies Press. (2005). The Owner's Role in Project Risk Management.

e. Do nothing

The do-nothing alternative implies that both parties does nothing vis-à-vis risks. This includes: allowing the risk to happen, anticipate no response to it and not attributing a risk owner. This is the worst attitude to have in risk management.

I. ATTRIBUTES

In this section, we shall discuss six attributes to consider when attributing risks responsibility to a party. These attributes are: the ability to identify. This is one of the most important characteristics of risks management, not simply because it is the first step in risk management, but also because it helps to identify the different possible risks in a project. The ability to quantify a risk helps to prioritise each risk, in order to give the most appropriate response. The ability to determine probability will enable the risk managers to evaluate the risk's impact and the ability to control the risk prevents it from occurring. We shall also look at the ability to implement strategic and tactical responses to risk, that helps to better implement the agreed decision vis-à-vis a risk. These attributes will help in the determination of risk responsibility between the owner and the contractor or both.

Step 4- Selection of the Criteria to ACCEPT or REJECT the Alternative Solutions

Attributes	Contractor Assumes All Risks	Owner Assumes All Risks	Owner and Contractor SHARE all Risks Evenly	Owner and Contractor SPLIT the risks based on who is best able to manage them	Do nothing
Ability to Identify	Good	Good	Excellent	Excellent	Poor
Ability to Quantify	Fair	Fair	Fair	Excellent	Poor
Ability to determine probability	Poor	Poor	Fair	Excellent	Poor
Ability to control	Good	Good	Good	Excellent	Poor
Ability to implement STRATEGIC responses	Good	Excellent	Excellent	Excellent	Poor
Ability to implement TACTICAL responses	Excellent	Good	Excellent	Excellent	Poor

As criterion, this paper will not consider any feasible alternative that does not have at least one green box. So, based on the matrix analysis table above, we will eliminate the do-nothing

option. The do-nothing option is the worst option in risk management, as it simply implies allowing the risk to occur and take no measures to respond to it.

FINDINGS

Step 5: Analysis and comparison of the alternatives

In this section, we will compare all the alternatives, which will enable the recommendation of the best option, using the following figures:

1=excellent
0.67= good
0.33= fair
0.00= poor

Attributes	Contractor Assumes All Risks	Owner Assumes All Risks	Owner and Contractor SHARE all Risks Evenly	Owner and Contractor SPLIT the risks based on who is best able to manage them	Do nothing
Ability to Identify	0.67	0.67	1	1	0.0
Ability to Quantify	0.33	0.33	0.33	1	0.0
Ability to determine probability	0.0	0.0	0.33	1	0.0
Ability to control	0.67	0.67	0.67	1	0.0
Ability to implement STRATEGIC responses	0.67	1	1	1	0.0
Ability to implement TACTICAL responses	1	0.67	1	1	0.0
Total	3.34	3.34	4.33	6	0.0

MULTIPLE ATTRIBUTE DECISION MODEL (MADM) – compensatory method.							
Attributes	**Step one**	**Step two**	**Contractor Assumes All Risks**	**Owner Assumes All Risks**	**Owner and Contractor SHARE all Risks Evenly**	**Owner and Contractor SPLIT the risks based on who is**	**Do nothing**

	Relative rank	**Normalized weight**				**best able to manage them**	
Ability to Identify	1	0.05	0.03	0.03	0.05	0.05	0
Ability to Quantify	2	0.10	0.03	0.03	0.03	0.10	0
Ability to determine probability	3	0.14	0.00	0.00	0.05	0.14	0
Ability to control	4	0.19	0.13	0.13	0.13	0.19	0
Ability to implement STRATEGIC responses	5	0.24	0.16	0.24	0.24	0.24	0
Ability to implement TACTICAL responses	6	0.29	0.29	0.19	0.29	0.29	0
Total	**21**	**1**	**0.64**	**0.62**	**0.78**	**1.00**	**0.00**

Step 6 : Selection of the preferred alternative

Based on the above table, we can say that, splitting the risks between the owner and the contractor depending on who is best able to manage the risk appears to be the most appropriate option in attributing risk responsibility in projects, after sharing the risks evenly. This can be seen through the result which shows that splitting the risk is 128% (1/0.78*100) better than sharing risk evenly. However, sharing the risk is the second best option, as it is 122% (0.78/0.64*100) better than letting the contractor assuming all risk. Both the owner and the contractor can also assume all risk individually, but, as the table shows, it is not a good option. This paper therefore recommends that the owner and the contractor share the risks based on who can best manage it.

Step 7: Performance monitoring and post evaluation results

Risk management in a project is a very important aspect. The success of a project highly depends on the ability of all parties to appropriately manage risks through good and careful preparation. As such, it shouldn't be managed just by one party. Allocating risk responsibility to the party that can best mange It helps to considerably reduce the cost of the risk and helps to manage it efficiently.

Also, even if both parties identify, quantify and determine the probability of the risk, assigning the risk responsibility to the party that can best manage it will enable a better control of the risk. For example, risk concerning safety requirements will be attributed to the contractor because he is more likely to minimize the risk on the working area, whereas, the design errors will be more attributed to the owner.

Furthermore, indemnity provision is another way of assigning responsibility to the party that can best manage the risk. This implies that, one of the parties to pay for the loss generated by the other party, based on the claims of a third party. For example, the owner will indemnify the contractor if hazardous substances are found on a working site and the contractor will indemnify the owner if claims for bodily injury occurs.

However, the choice between attributing the risk to the party that can best manage it or splitting the risk responsibility between the contractor and the owner will largely depend on the type of risk and on the type of project. If both parties are co-investors, splitting the risk between the two, especially if it concerns a loss will be the appropriate option.

Recommendation for tracking

So, for a better follow up of this selected alternative, I recommend the use of the Pareto analysis. It is a tool can that can be used both before and after the project, to select a limited number of options that will produce significant effect, like attributing the risk responsibility to the party that will best manage it, or splitting the responsibility of the risk between the owner and the contractor, depending on the type of contract. According to the Pareto law," … 80% of the effects come from 20% of the causes"[8]. Meaning in this case that, even though risk does not constitute a whole project, it can however influence 80% of it. So, knowing who takes responsibility for a risk is capital in a contract.

CONCLUSIONS

This research was undertaken with the objective to answer these questions:

- What are the limits of the owner's responsibility in risk management?
- What are the limits of the contractor's responsibility?
- In which case both parties can manage risk together based on who can best manage the risk?
- In which case can both parties they can split the risk?
- What actions should be taken to reduce risk occurrence on both the contractor and the owner side?
- Should risk occur in projects, who takes responsibility?

[8] Pareto principle. (2017, October 1). Retrieved from https://en.wikipedia.org/wiki/Pareto_principle

From the above analyses, we can say that the responsibility of a risk depends on the type of risk and the type of alliance between the owner and the contractor. However, based on our research and feasibility alternative, it is better to give a risk responsibility to the party that can best manage it. That is the party which is in a better position to give the appropriate response to the risk faced, should it occur. Also, this paper shows the limits of the owner and contractor responsibility in risk management. Both parties cannot manage every risk individually, since there are specific risks adapted to each party.

The recommended actions to undertake to reduce risk occurrence for both the owner and the contractor are as follows:

- A clear understanding of the contract, a sound and careful planning of the project steps, to better identify the different potential risk and give adequate responses. This is all about risk awareness.
- A good risk assessment at the beginning of the project. This is all about the decision to carry on the project and accepting the risk, determining and identifying the highest priority risk factor(s) on which the managers shall pay attention throughout the project.

Concerning specific risk management, the optimum delegation of risk responsibility should be determined by the owner

The decision-making process should not be long, because, long decision processes can increase risks uncertainties and delays, that could be caused by political, economic and regulatory changes. However, deliberate adjournment of certain decisions can lead to better decision as more information will be gotten.

In a nutshell, risk management is a very important aspect of project management. Risk responsibility should be shared among the owner and the contractor, based on who can best manage it. Also, risk occurrence in projects can be reduce, provided both parties take into consideration certain points.

BIBLIOGRAPHY

The Charpman Firm. (2015, February 19). Contractor's risk allocation: Adequacy of design/responsibility. Retrieved from https://www.chapmanfirmtx.com/contractors-approach-risk-allocation-vi-adequacy-designdesign-responsibility-clauses/

Comprehensive Guide to Contractor Risk Management | Initiafy. (n.d.). Retrieved from http://www.initiafy.com/comprehensive-guide-to-contractor-risk-management

David J. Pfeffer. (2010, December 28). The Construction Contract: Lump Sum vs. Cost-Plus (NYLJ.com) | Pardalis and Nohavicka Attorneys. Retrieved from http://pnlawyers.com/the-construction-contract-lump-sum-vs-cost-plus-nylj-com/

DBH Resources, Inc. (2008, January). Contractors' risk management practice. Retrieved from http://lucienwright.com/Contractors_Risk_Management_Guide.pdf

E. MILLER J. (2001, January). Managing contractual risk issues. Retrieved from http://read.nxtbook.com/ncma/contractmanagement/january2014/managingcontractualriskissues.html

Ellison, M. (2017). Responsibilities of principal contractors - Minter Ellison. Retrieved from http://www.constructionlawmadeeasy.com/Responsibilitiesofprincipalcontractors

James P. Bobotek. (2011, June 15). Top 10 Issues in Construction Contracts. Retrieved from https://www.pillsburylaw.com/en/news-and-insights/top-10-issues-in-construction-contracts.html

K. Paul Yoon, & Ching-Lai Hwang. (n.d.). Multiple Attribute Decision Making | SAGE Publications Inc. Retrieved from https://us.sagepub.com/en-us/nam/multiple-attribute-decision-making/book4782

Krane, Petter, H., Olsson, Nils O. E., Rolstadås, & Asbjør. (2012, April). How project manager-project owner interaction can work within and influence project risk management. Retrieved from https://www.pmi.org/learning/library/owner-interaction-influence-risk-management-2234

McIntyre, M., Gentges, D., & Cranley, P. D. (2013, September 16). The Basics of Risk Management in Construction Contracts. Retrieved from http://enewsletters.constructionexec.com/riskmanagement/2013/09/the-basics-of-risk-management-in-construction-contracts/

The National Academies Press. (2005). The Owner's Role in Project Risk Management. Retrieved from https://www.nap.edu/read/11183/chapter/4

Olsson, N., & Berg-Johansen, G. (2015). *Project ownership in theory and practice. Project owners type 1 and type 2*. Retrieved from https://www.ntnu.no/documents/1261860271/1262021752/Project+owner+1+and+2_+concept_21_12-2015+to+send+acc+ch.pdf/0b2b65a2-db89-44e0-b2a4-b782adc9e08c

Outsourcing Law. (n.d.). Risk Sharing Agreements. Retrieved from http://www.outsourcing-law.com/risk-sharing-agreements/

Pareto principle. (2017, October 1). Retrieved from https://en.wikipedia.org/wiki/Pareto_principle

Risks management in contracts. (n.d.). Retrieved from https://www2.viu.ca/riskmanagement/documents/RiskManagementinContracts.pdf

What is a contractor? definition and meaning. (n.d.). In *BusinessDictionary.com*. Retrieved from http://www.businessdictionary.com/definition/contractor.html

About the Author

Marie Osée Tchoyo Agoume

Paris, France

Highly motivated to be a good and respected project manager tomorrow, Marie Osée TCHOYO AGOUME is a young Cameroonian who began her studies in her native country, Cameroon, where she got a bachelor's degree in advertising and a master's degree in corporate communication and marketing at the Advanced School of Mass Communication. In 2015, she went forward to pursue her studies in France at SKEMA business school, where she is enrolled in a Master's degree program in project and programme management and business development. She likes working in a multicultural environment as well as facing the challenges of complex projects. In her previous role, she had the opportunity to work in CRM projects as an assistant in customer retention. Her dream is to work with one of the UN humanitarian organisms, as she is very interested in working with refugees, disabled and homeless people.