**Assignment**

**Advantages and Disadvantages of Risk Management in the project**

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1. **Statement of purpose**

Overall, in projects, unintended circumstances arise that may manifest in either good or disappointing consequences that are a deviation from the project plan. Positive results are advantages whereas negative results cause a disadvantage. Risk depends on avoiding losses due to unexpected circumstances (Williams, 1995). The literature includes many definitions of risk, and risk is generally referred to as vulnerability to losses in a project (Webb, 1996; Chapman & Ward, 1996) or as a probability of losses in a project (Jaafari, 2001). Risk is measurable and extends itself to analytical modeling for review and evaluation. A circumstance in which a likelihood of occurrence cannot be attributed to an event is defined as uncertainty or risky (Taha, 1997). Although uncertainty cannot be measured, it can be approximated using subjective evaluation methods.

Risk management mechanism deals with finding vulnerabilities in approaches used in product production by a systematic methodology in order to facilitate prompt mitigating steps to prevent risk, shift risk, minimize the possibility of risk or mitigate the risk effects. Consequently, early detection of potential incidents contributing to unintended losses is much safer than handling losses when they cannot be stopped (Koh, Saad, Ahmed, Kayis & Amornsawadwatana, 2007). Risk management offers genuine and significant benefits to organizations, their projects and their stakeholders, but these will never be achieved without recognition of the importance of managing risk at all levels in the business, matched with operational effectiveness in executing risk management in practice (Hillson, 2005). Risk management is the key management instrument which can be used by a project manager to significantly raise the probability of project success. Because risk management is either not used or not known, those who apply the risk management systems in their projects may have a significant competitive advantage (Kwak & Stoddard, 2004).

Risk management is the method composed of different phases: identification, analysis, response, monitoring and reporting (De Bakker, Boonstra & Wortmann, 2010). Risk management approach is built on rational decision-making. It sought to assess project-specific situations and events that can impact the original plan, and to improve action to guarantee the current project on schedule. The contribution of the risk assessment approach to project performance is clear, since it discusses the real risks of the current project.

According to project management theory (Pinto, 2013), project risk management has a positive effect on project success in terms of “on time, within budget delivery” of a predefined result. Ropponen and Lyytinen (1997) state that a frequent and continuous use of risk management measures by project managers in various projects over time contributes positively to the effectiveness of risk management in their own projects. Risk management is an “instrument” through which project managers identify, analyse and control project risks, and is considered in a social context, meaning that interactions between actors in the risk management process may be able to influence perceptions and valuations of the stakeholders regarding reality, particularly in relation to the outcomes of the project.

1. **Background**

After the eighth century, the world has experienced risk management where implementation of risk management was limited to the financial industry for even more than 200 years. Fifty years ago, the increasing importance of risk management prompted project management experts and educators to try to promote a usual procedure of risk management in their prescribed and guideline project management methods (Merna & Al-Thani, 2008). Risk-management methodology has grown by leaps and bounds. As of today, there has been close agreement among researchers and professionals that risk management has four main procedures: identification, assessment, response preparation, monitoring and control (Saad, 2020).

Since then risk management becomes one of the most crucial processes in project and operation management nowadays. However, the accelerating rate of changes in project and business environment raises questions about the capability of traditional risk management processes to provide efficient performance. As projects are associated with risks due to the presence of uncertainties and unknowns, risk management assumes importance in project success (Raj & Wadsamudrakar, 2018). Risk is generally seen as an exposure to a situation that leads to unfavorable outcome. However, in the context of a project, project risk is an uncertain event or conditions that, if occurs, has a positive or a negative effect on at least one project objective. Therefore, project risk is the possibility of suffering loss or gain. If left unaddressed or ignored, specifically, the negative risk, it could potentially interfere with the successful completion of the project and may result in time and cost overruns, or diminished quality of the product or service (Anantatmula & Fan, 2018). Risks are integral to all projects as a project is a new endeavor and anything new is associated with unknowns and uncertainties. Progress is associated with taking risks. It is important to make a distinction between a risk and a problem.

Occurrence and assessment of a project risk is a combination of an event which is unanticipated or unwanted, likelihood of its occurrence and its impact on project execution. So, identifying, analyzing, and responding are the essential elements of risk planning. For a proper risk analysis, three actions are imminent (Zakari Danlami, Emes & Smith, 2016):

*1.*Identifying a risk event or undesirable change

*2.* Assessing the probability of its occurrence

*3.* Evaluating its impact on key project success factors (scope, cost, time, and quality)

Project risk can occur from two sources; first, uncertainties and unknowns associated with the project, and second, actions of people who are either directly or indirectly involved with the project. What makes it challenge to deal with risks is that uncertainty is inherently a difficult topic; it can be computationally overwhelming (Elmaghraby, 2005) unless simplified models are adopted to address risk. Therefore, project managers will have greater opportunity to identify risks during the initial stages of a project as compared to later stages of the project. If one can identity, analyze and develop a risk response plan during the initial stages of the project, the impact can be minimized or avoided (Anantatmula & Fan, 2018).

Risk management is one of the nine knowledge areas propagated by the project Management institute. The benefits of the Risk Management Process include identifying and analyzing risks, and improvement of project management processes and effective use of resources. Risk and Uncertainty can potentially have damaging consequences for the projects. Therefore nowadays, the risk analysis and management continue to be a major feature of the Project management of projects in an attempt to deal effectively with Uncertainty and unexpected events and to achieve project success.

1. **Significance**

Production of projects is one of the most important production patterns, the success of these projects basically depend on effective management for planning, monitoring and scheduling project activities, and taking necessary actions to accelerate the completion of its certain activities. The project management today is an important field in the domain of business, engineering management and information technology, although mastering skills of planning, control and scheduling of the project has become vital to its success, as today's business environment are dynamic and rapid change the lot of surprises and risks are taken into account highlights suddenly, leading to confusion and block the implementation of the project, or perhaps completely collapse (Keshk, Maarouf & Annany, 2018).

One of important duties of management is the analysis of deviations are happened; also some tasks of management are preparation of controlling reports and taking necessary steps to correct them. Risk management is a methodology in which one can examine, characterize, separate, and relieve the possibilities that can influence our task. Risk management is a significant part of the project if executed correctly, can lead to the achievement of the project. This is an action plan that comprises of different advances which are done to guarantee the evacuation of threat. Sometimes in the project you deal with, it can include external risk, which is not in control; in that case, there is always a need for a plan that can reduce the effect of such uncertainty.

The risk mitigation technique to be utilized relies upon a project that can be tackled by the group of the team, so you must be cautious about creating a strategy towards risk. It expands the probability of your achievement up for the long term. These are the advantages of creating and applying a productive risk management plan during the project. It helps to keep away from any major disaster. Enhances your incomes by conserving your expenses.

1. **Description of the project:**

Project Risk Management is tied in with creating policies to forestall or limit the effect of alarming dangers to an undertaking. There is a consistent vulnerability factor about the positive result of a venture. Things can turn for the worse rapidly, and when venture supervisors grasp the significance of the threat, the executives would be deliberately planning to deal with these dangers. At the point when the leader takes on a long-haul task, there is an excellent array of issues to be worried about, from setting up a financial limit to keeping staff on duty. In this way, all things considered, chance administration methodologies may never go into venture arranging. Nevertheless, investigating these methodologies is a need because the advantages of creating plans for dealing with unexpected issuesare various.

1. **Preliminary literature review:**

In an ever-increasing competitive business environment, it has become increasingly important to be able to obtain efficient and sustainable business operations not only by efficient core procedures but also by being able to minimize losses incurred by risk taking. The latter by handling both operational risks and financial risks in a unified model. Almost all the projects involves several risk factors that need to be tackle with proper planning and strategy. According to definition a risk in any project, risk can be defined in any project that an event or circumstance is uncertain which results from its occurrence a negative or positive impact on the goal of the project (Duncan, 2005). Therefore, here come the role of risk management while working on projects. Risk management is probably the most difficult aspect of project management. A project manager must be able to recognize and identify the root causes of risks and to trace these causes through the project to their consequences. Furthermore, risk management in the project management context is a comprehensive and systematic way of identifying, analyzing and responding to risks to achieve the project objectives.

1. **Project Risk Management**

Project risk management is the art and science of identifying, analyzing, and responding to risk throughout the life of a project and in the best interests of meeting project objectives (Schwalbe, 2015). Project risk management involved understanding potential problems that might occur on the project and how they might impede project success. Several research results indicated that poor risk management was a likely cause of project problems and failures. Risk management researchers have focused on the examination of process models that provide prescriptions for risk management, typically including variations on the four processes of risk i.e. identification, assessment, response planning, and monitoring (Taylor, Artman & Woelfer, 2012). Moreover, Schwalbe (2015) expressed six processes that were involved risk management such as planning risk management, risk identification, qualitative risk analysis, quantitative risk analysis, risk response planning, and risk monitoring & control. Credar (2015) elaborated that every project had risk, say for example; resources left the organization, leadership changed and budgets got cut etc. There were many factors beyond control. However, many risks to projects can be mitigated or even eliminated with some forethought and ongoing management.

1. **Project Success/ advantages due to risk management**

There were a variety of approaches about the measurement of project success. The model of DeLone and McLean expressed six measures for information system’s project success such as system quality, user satisfaction, information quality, information use, organizational impact, and individual impact (Sudhakar, 2012). Many researchers have suggested that projects should be rated as successful when they are completed within or near the estimated schedule and budget, and produce an acceptable level of performance (Martin, Pearson & Furumo, 2007). Furthermore, Mahaney and Lederer (2011) carried out a study using a project completed on time and within budget that worked as the measures to evaluate project success. Some studies were aware of the benefits, which were used as criteria to justify project success (Nelson, 2008). Project success involves two components, such as project management success and product success (Bhuinyan, Gadekar, Agrawal, Basak & Raut, 2019).

1. **Risks and uncertainties in project management**

Risks and uncertainties are inherent to projects because, by definition, a project is unique and therefore faces unknown risk factors. However, several authors claim that there is a plethora of studies focusing on risk management to the detriment of risk management (Perminova, Gustafsson, and Wikstrom 2008; Cleden 2012, Carvalho & Rabechini Junior, 2015), and that strategies for managing risks and uncertainties may require different approaches. Perminova et al. (2008) conducted a survey of the concept of risk and uncertainty in several areas of knowledge. In fields such as economics and psychology, there is a clear distinction, and risks are events subject to a known probability, whereas uncertainty is a situation for which a numerical probability, characterized by a conscious lack of knowledge about the results of an event, cannot be specified. According to Wideman (1992), the distinction between the unknown and certainty constitutes the limits of the field of uncertainties.

Conversely, in the context of project management, Perminova et al. (2008) suggest that this distinction is ambiguous. Risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on at least one of the project goals, such as time, cost, scope or quality. Meyer, Loch, and Pich (2002) argue that there is a need for different approaches based on types of risks. They suggest four types of uncertainty: variation, foreseen uncertainty, unforeseen uncertainty and chaos. They argue that in practice, more attention focuses on the first type of risk and uncertainty, i.e. variability, which can be understood as random variations in which the occurrence and impact on project goals can be modelled. These researchers posit that risk management represents an instructionist, pre-specified approach, triggering actions based on signals, which is only possible if adequate information is available. Thamhain (2013) reinforces this idea by arguing that complex projects require management interventions that go beyond simple analytical approaches. In his study of high-tech companies, almost 50% of the contingencies that occurred during projects were detected only after they had affected the performance of the project. Chapman and Ward (2003), Atkinson, Crawford, and Ward (2006), Perminova et al. (2008), and Cleden (2012), among others, make similar critiques.

Pich et al. (2002) suggest that the reason for insufficient information is unknown events or causality (ambiguity) or an inability to assess the effects of actions due to the interaction of many variables (complexity). Xiang, Zhou, Zhou and Ye (2012) also highlight the problem of information asymmetry, which gives rise to opportunistic behavior and increased risk in the context of the construction industry. Pich et al. (2002) argue that a combination of learning (an ability to conduct new and original planning in the middle of the project) and selectionism (a search for multiple solutions until the best alternative is identified) is required to manage projects in these environments. Along these lines, Ward and Chapman (2003) suggest uncertainty management as a substitute for risk management, because the former involves a more comprehensive approach.

With regard to the impacts of risks and uncertainties on the project, the consensus is that a dual approach is needed that focuses not only on the negative standpoint or threat but also on the positive standpoint or opportunity (Hillson, 2005; Perminova et al. 2008). Bernstein (1996) postulates that this idea is an evolution of the concept, which theretofore was associated solely with the negative impact, and in the late 1990s the literature began to discuss positive impacts and propose strategies to strengthen them. This discussion suggests that there is a continuum between risk and uncertainty in projects and that management approaches should consider this entire spectrum, which involves different strategies (Carvalho & Rabechini Junior, 2015).

1. **Implications of risk management on projects**

Söderlund and Maylor (2012) state that the risk management area has received considerable attention in the project management literature. In addition, the body of knowledge of reference of associations and institutes dedicated to project management postulate that risk is a key area. However, several authors state that risk management practices are still rarely applied in the daily routine of projects, even large and complex ones, thus characterizing a gap in the area (Zwikael and Sadeh 2007, Carvalho & Rabechini Junior, 2015). The literature offers models that focus on risks that apply project uncertainty management (Chapman and Ward, 2003; Pich, Loch, and Meyer 2002; Atkinson et al., 2006; Perminova et al., 2008; Cleden 2012, Carvalho & Rabechini Junior, 2015). The majority of approaches to project risk management follow the logic of process groups throughout the life cycle, which requires the use of several techniques and tools (Carvalho & Rabechini Junior, 2015).

In addition, several studies have focused on identifying the state of project risk management practices. One of the most comprehensive studies was conducted by Zwikael and Ahn (2011) in three countries (New Zealand, Israel and Japan), involving 701 project managers in seven industrial sectors. The study highlights the importance of project context, considering the industry’s and country’s levels of project risk. The authors suggest that even moderate levels of risk management planning will suffice to reduce the negative effects of risk on project success. De Bakker, Boonstra & Wortmann, 2012) support these findings and emphasise the importance of identifying risks as having more widespread effects on project success, followed by risk reports. De Bakker et al. (2012) suggest that risk management activities contribute to project success via four different effects: action, perception, expectation and relation. Action effects are instrumental to the stakeholders’ ability to cause and stimulate an effective action. Perception and expectation effects involve the stakeholders’ ability to establish a consensual view of the final expected outcome and to motivate their behavior during execution of the project to deal with objective and subjective differences. The researchers conclude that in addition to the instrumental effects of risk management, communication effects play a key role by establishing a shared vision of the project’s uncertainties and the expectations for its success (Carvalho & Rabechini Junior, 2015)

1. **Methodology/ Data analysis plan**

1. **References:**