



Everyone's Smart University

Project (Spring 2021)

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Section

Master

Date

Thursday

18 / 03 / 2021.

Course Code

(PMG510)

Project Risk Management

Instructions:

- اخر موعد للتسليم هو يوم السبت 2021-05-08 في تمام الساعة 9 مساءً.
- الإجابة متاحة باللغة الإنجليزية أو اللغة العربية مع مراعاة أن تكون المصطلحات العلمية باللغة الانجليزية.
- يتم تسليم المشروع في صيغة ملف . pdf مع الالتزام نموذج الجامعة ولن تقبل أي مستندات أخرى.
- يجب مراعاة أقسام البحث الرئيسية (مقدمة Introduction، دراسات علمية سابقة Literature Review، طريقة البحث Methodology، النتائج والمناقشة Results and Discussion ، وأخيراً المراجع References . وان كان هناك ملحقات Appendices يتم إضافتها)
- يجب الالتزام بـ Theme موحد كما يلي:
- حجم الخط 12.
- نوع الخط Arial.
- لون الخط أسود.
- المسافة بين الأسطر 1.5 line spacing
- عدد صفحات البحث (لا يقل عن ثلاث صفحات ولا يزيد عن ست صفحات).

Instructor's Name: Eng. Mosaab M. Hamed

Project:

Risk Identification and Analysis (Based on the project you chose in APM)

The objective of this report is to identify project risks, prepare a risk probability matrix, and carry out an analysis of selected risks. Referring to the project you select in **Advanced projects management APM course**, your task is to prepare a risk management plan that identifies potential risks in **the selected stage of the project** and identify risk management strategies.

From the course content and readings, you know that the overall purpose of risk planning is to anticipate possible risk events and be ready to take appropriate action when risk events occur—to eliminate or reduce negative impacts on the project.

You may wish to begin this exercise with a brainstorming about potential risks to get candidate risks “on the table” for consideration. And then identify and refine that wording for risks that have some realistic chance of occurring in this stage. For example, potential weather problems present a real obstacle to completing field data collection by the planned completion date. It is also an issue that the project manager will ultimately have to plan for, as opposed to other issues such as a major disaster (e.g., your office burning down), is not a high-enough probability event that requires much time in planning. As described below, you will select several of the identified risks and carry out a risk analysis.

You will use the distilled list of risks to make a risk probability/impact matrix. The matrix will have at least three categories (high/medium/low) for probability and impact.

Remember that it is important to name risks effectively—use words that describe the risk event and point to the impact on the project (e.g., “injury of field technician disrupts data installation work”).

After completion of the risk matrix, document a risk analysis for the selected risks. This detailed documentation for that selected risk will include:

- a description of the risk and potential impacts (schedule, quality of work, cost, etc.) on the project.
- indicators or triggers that would be monitored to help identify the risk as early as possible.
- specific risk response strategies to take.

Using probability and impact matrix calculate the **Expected Monetary Value (EMV)** for all risks that have the impact in terms of cost \$\$.

Best of luck...

المشروع:

التعرف على المخاطر وتحليلها (بحث مبني على مشروعك الذي اخترته في مادة ادارة المشاريع المتقدمة)

الغرض من هذا التقرير هو التعرف على المخاطر المحيطة بالمرحلة التي تختارها المرحلة من مراحل مشروعك (نفس المرحلة التي اخترت التطرق لها في مشروعك لمادة إدارة المشاريع المتقدمة Advanced project management) حيث أن مهمتك هي تحضير خطة متكاملة لإدارة المخاطر تشمل التعريف بالمخاطر المحتملة التي تحيط بتلك المرحلة وتحضير مصفوفة احتمالية المخاطر ومن ثم القيام بالتحليل لهذه المخاطر المختارة وتحديد استراتيجيات ادارة المخاطر المناسبة لكل خطر على حدة.

من محتويات المقرر والمصادر الأخرى المتاحة أصبحت تعلم الان أن الغرض العام لمرحلة التخطيط للمخاطر هي توقع أحداث المخاطر المحتملة والتجهز لاتخاذ ردة الفعل المناسبة عند وقوع الخطر – لمنع أو تقليل الآثار السلبية على المشروع.

قد تحبذ بداية هذا البحث بعصف ذهني عن ماهية المخاطر التي قد تحيط بتلك المرحلة من مراحل مشروعك, وذلك للحصول على قائمة بتلك المخاطر. ومن ثم تحديد وتصفية هذه القائمة للوصول إلى قائمة مختصرة بالمخاطر التي لها فرصة واقعية أكبر في الحدوث. على سبيل المثال: المشاكل الجوية المتوقعة والتي تمثل عقبة حقيقية أمام اكتمال جمع البيانات من المواقع في أو قبل الوقت المحدد، هذه تعتبر مشكلة على مدير المشاريع أن يضعها في الحسبان. من ناحية أخرى، فإن المخاطر غير الواقعية مثل الكوارث الطبيعية والأعاصير (تلك التي تسبب حريقاً بمكتبك وفقدان الأوراق المهمة) ليست لها احتمالية وقوع عالية وبالتالي لاتستدعي تضيق الكثير من الوقت في التخطيط لها. كما سيتبين لك، ستقوم باختيار عدة مخاطر من تلك التي قمت بالتعرف عليها لتحليلها.

ستقوم باستخدام هذه القائمة المختصرة لعمل مصفوفة المخاطر (الاحتمالية/الأثر). المصفوفة ستحتوي على الأقل على ثلاث تصنيفات (عالي/متوسط/منخفض) للإحتمالية والأثر.

لاتنس استخدام أسماء تصف طبيعة المخاطر بصورة فعالة – قم باستخدام كلمات تصف الحادثة الخطرة وتشير الى أثرها على المشروع (مثل: إصابة أحد الفنيين في الموقع مما يؤثر على أعمال التركيب).

بعد انتهاءك من مصفوفة المخاطر، قم بتوثيق تحليلك للمخاطر المختارة. هذا التسجيل المفصل للمخاطر يجب أن يتضمن:

- وصف للخطر واثاره المحتملة (الجدولة، جودة العمل، التكلفة، الخ)
- المؤشرات والمحفزات التي يجب مراقبتها للمساعدة في التعرف على هذا الخطر قبل وقوعه
- تفصيل للاستجابة المقترحة للتصدي لهذا الخطر

باستخدام مصفوفة الاحتمالات والتأثير ، احسب **القيمة النقدية المتوقعة (EMV)** لجميع المخاطر التي لها تأثير من حيث التكلفة \$\$.

مع تمنياتي بالتوفيق..

NOVA WATER COMPANY (CCTV & Network PROJECT)

1. Introduction

Project Risk Management includes the processes of conducting risk management planning, identification, analysis, response planning, response implementation, and monitoring risk on a project. The objectives of project risk management are to increase the probability and/or impact of positive risks and to decrease the probability and/or impact of negative risks, in order to optimize the chances of project success.

All projects are risky since they are unique undertakings with varying degrees of complexity that aim to deliver benefits. They do this in a context of constraints and assumptions, while responding to stakeholder expectations that may be conflicting and changing. Organizations should choose to take project risk in a controlled and intentional manner in order to create value while balancing risk and reward.

Project Risk Management aims to identify and manage risks that are not addressed by the other project management processes. When unmanaged, these risks have the potential to cause the project to deviate from the plan and fail to achieve the defined project objectives. Consequently, the effectiveness of Project Risk Management is directly related to project success.

Risk exists at two levels within every project. Each project contains individual risks that can affect the achievement of project objectives. It is also important to consider the riskiness of the overall project, which arises from the combination of individual project risks and other sources of uncertainty. Project Risk Management processes address both levels of risk in projects, and these are defined as follows:

- **Individual project risk** is an uncertain event or condition that, if it occurs, has a positive or negative effect on one or more project objectives.
- **Overall project risk** is the effect of uncertainty on the project as a whole, arising from all sources of uncertainty including individual risks, representing the exposure of stakeholders to the implications of variations in project outcome, both positive and negative.

2. Literature Review

The risk is attached to human life and is present in all human attempts. Nevertheless, the complexity of the work involved in construction project activities makes the latter more predisposed to risk. The part of the risk involved in construction is also more different and varies in degree owing to this complexity. Several researchers have tried to define risk in various ways; generally these definitions were tailored to the objectives of the projects they were dealing with at a particular time. Nonetheless, the definition of risk is highly dependent on the importance placed on applied management in an establishment. Risk describes a situation where former documentation and experience exist upon which measures are taken by obtaining a possible result. Every time a decision is taken as a continuum of possible outcomes in addition to certain probabilities attached to the outcome, a risk exists. Furthermore, argue that risk is occasionally expansively defined, beyond financial, as a probability of loss, injury, setback, disadvantage or destruction.

3. Methodology

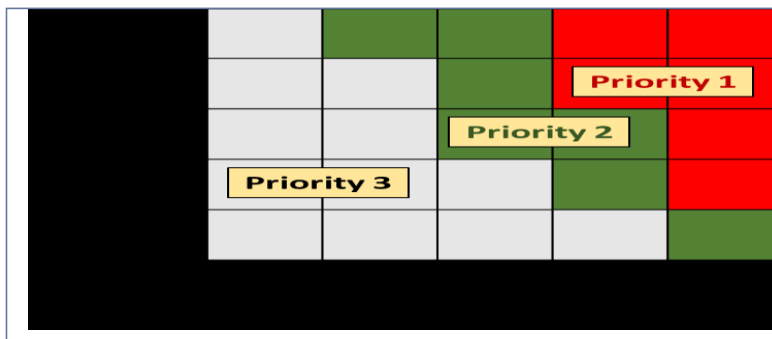
The risk management plan comprises a methodology, roles and responsibilities, budget, and timing of conducting risk management activities; it also contains definitions of probability and impact, probability impact matrix, stakeholder risk tolerances; and reporting formats.

- ✚ Engaging project stakeholders and project team should identify risks effectively in
- ✚ Order to obtain a comprehensive risk register.
- ✚ Risks should be prioritized by using qualitative approaches considering the probability and impact of risks.
- ✚ Quantitative analysis should only be performed if needed.
- ✚ Risk response planning should be conducted.
- ✚ Unconditional responses should be updated in the project management plan.
- ✚ Trigger conditions should be defined for conditional responses.
- ✚ Responses should be implemented as planned.
- ✚ Risks should be monitored, assessed for validity, and new risks should be Identified and analyzed.

✚ Probability and Impact Definitions

Scale	Probability	Impact on Cost	Impact on Time
Very High	>70%	>\$5M	>8 months
High	51-70%	\$3M-\$5M	5-8 months
Medium	31-50%	\$1M-<\$3M	3-<5 months
Low	11-30%	\$0.05M-<\$1M	1-<3 months
Very Low	<10%	<\$0.5M	<1 month

✚ Probability and Impact Matrix



The diagram shows a 5x5 grid representing the Probability and Impact Matrix. The grid is divided into three priority zones:

- Priority 1 (Red):** The top-right corner, specifically the cells where both Probability and Impact are High or Very High.
- Priority 2 (Green):** The middle section, where either Probability or Impact is Medium or High, but not both are Very High.
- Priority 3 (Grey):** The bottom-left section, where both Probability and Impact are Low or Medium.

Risk management processes are then performed; risks are identified by involving several stakeholders in order to produce a risk register, this has been done via interviews, and brainstorming considering the available and extensive experience of the involved stakeholders; each identified risk has been prioritized through qualitative risk analysis process considering the probability of occurrence and the impact; the results identified priority group of risks where responses and actions should be focused on.

Risk ID	Risk Description (Cause – Risk – Effect)	Risk Owner	Probability	Impact	Priority
R001	Incomplete definition of requirements may cause many changes to the scope which may affect the project planned dates and budget	Project Manager	Medium	Very High	Priority 1
R002	Using only one source of electricity may cause power failure which may affect construction progress	Project Manager	Medium	Medium	Priority 2
R003	Utilizing a nominated subcontractor may cause some difficulties in coordination which may affect the quality of deliverables and the completion date of the project	Project Manager	Medium	High	Priority 2

4. Results and Discussion

The results of risk management planning processes are used to update / re-planning the project management plan and baselines to consider the risk effect on the project objectives and to incorporate the corresponding actions in order to control the risks and prevent/mitigate their effect on the project objectives.

5. Reference.

1. PMBOK GIUDE 6th edition
2. PMI.ORG
3. www.researchgate.net
4. Beranger Y. Renault¹ a and Justus N. Agumba²