



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

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Section

Master

Date

Thursday

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Course Code

(PMG510)

Project Risk Management

Instructions:

- اخر موعد للتسليم هو يوم السبت 2021-05-08 في تمام الساعة ٩ 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 line spacing 1.5
- 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 الآن 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..

Production Line Development Project

Introduction:

A risk is an uncertain event or condition that, if it occurs, has a positive or negative effect on a project goal [1]. Identifying and mitigating project risks is the key step in achieving successful projects [2]. It has been demonstrated that failure to deal with risk is the main cause of budget exceeding, falling behind schedule, and missing performance targets in several industries, such as our project, because the project characterized by huge investments, long execution processes, many resources, and stakeholders, and unstable economic and political environments introduce a high level of complexity that's why we need a strong assessing and controlling risk throughout all the phases of a project [3]. Because each project is unique in its way, any project can face specific risks previously unused. If one of the uncertain events happens, the project goals may be affected. The first step in risk management is the identification of possible risks. The project management job is to explore solutions to avoid risky conditions. Hillson and Hulett (2004) point out that "there is no collection of lessons learned from the various projects that provide the solution to overcome certain types of risks" [4].

In our project, we going to make development for cement production line due to high demand in the market. This project is considered an opportunity risk for my company because it that project-oriented to investment. In my research in APM, I was talking about determining the budget of the project, and this step happens in the planning phase of the project and there are many risks are surrounding determining the budget such as:

1. Change in environmental legislation: The cement industry is one of the most harmful industries to the environment because it contains gases and dust that pollute the environment. Therefore, we must adhere to environmental laws and procedures and **avoid** the risk of non-compliance and continuous follow-up of any updated in-laws and changes to plans for them. If any policy changes our plan will change which means this will affect in budget.

2. Inflation: Because the project takes more than one year and due to the economic conditions in which the world is going through, inflation is one of the risks surrounding the budget. When inflation risk occurs, we do not have any strategy response so will **accept** it.

3. Disrupted supply chains: In our project, we deal with international companies, and supply chain disruptions are likely to happen to any matter whatsoever, and this disruption will affect the plans, which affects the project budget. The best response to this risk is to **transfer** to an insurance company.

4. Health and safety: One of the most common risks that affect the workflow, and the project budget is health and safety in the workplace because injuring one of the workers means changing the plans and budget. The best response to this risk is to **avoid** its occurrence by increasing safety tools and increasing supervision.

Literature Review:

1. Brainstorming:

Brainstorming is an ideas generation technique that is divided into two phases: (i) idea generation phase, in which participants generate as many risks as possible (ii) idea selection phase, in which each participant supports the idea to convince the others. In the second phase, the risks are filtered, remaining only those approved by the entire group [5].

2. probability and impact matrix:

The probability and impact matrix are one of the generally used qualitative techniques for risk evaluation. The two elements of the risk matrix are variables. Risk calculation is easy, considering that likelihood and impact of an issue are assigned on a random basis to the total which can be a particular classification [4].

3. Expected Monetary Value (EMV):

The Expected Monetary Value (EMV) method is a mathematical concept analysis method that calculates the average future expenses that may or may not occur. EMV is calculated by multiplying the probability value of each risk multiplied by the impact of

risk that occurs. A positive EMV value indicates an opportunity, while a negative EMV value indicates a threat or threat that can harm the company [6].

Methodology:

Identifying risks: We used the technique of brainstorming sessions with the stakeholders and the sponsor of the project, and we got a large list of potential risks, and then we analyze these risks and focus on the most important and which related to the budget.

probability and impact matrix:

First, we will classify the risks on their impact and probability and give them the following classification:

1. High (rating A from 50 to 100).
2. Medium (rating B from 30 to 50).
3. Low (rating C from 0 to 30).

Now will make the matrix of probability and impact for our risks:

Risk	Probability	Impact rating
Change in environmental legislation	70%	A
Inflation	25%	C
Disrupted supply chains	40%	B
Health and safety	90%	A

Expected Monetary Value (EMV):

Now we are going to calculate Expected Monetary Value (EMV) for our risk with the following equation: $EMV = P \cdot IC$

$P \rightarrow$ Probability of risk

$IC \rightarrow$ Cost Impact

Risk	Risk Probability (P)	Cost Impact (IC)	Risk Contingency (P*IC)
Change in environmental legislation	0.7	\$-10,000	\$-7000
Inflation	0.25	\$-5,000	\$-1,250
Disrupted supply chains	0.4	\$-15,000	\$-6,000
Health and safety	0.9	\$-8,000	\$-7,200
Total		\$-38,000	\$-21,450

Results and Discussion:

After reviewing our calculation of the value of EMV, we conclude the following:

Our cost impact is \$38,000 and this huge amount to ask management to add to our budget, so we calculate Expected Monetary Value, and it is A logical and acceptable value.

The expected monetary value in our calculation came with a negative value (\$-21,450) which means that all the risks we have in the project are **threats** and there is no opportunity risk. This means also we should add **\$21,450** to the project budget as a **Contingency Reserve**.

References:

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