



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 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..

1. Introduction

The global business environment involves high levels of risk and complexity, which is a necessary condition for future growth and development for new products.

Therefore, projects managers have to deal with multi types of risk including technological, financial, environmental and regulatory. As a result, risk management is a critical consideration in many business areas which impacts profitability, operation and sustainability.

In this research will give overview and emphasize on risk associated for oil and gas & petrochemicals industry as consequence of US-China trade war following by COVID-19 pandemic recently.

2. Literature Review

2.1 Overview Oil and Gas Operations

Usually oil and gas operation divided into two main group which are upstream and downstream where is the most critical operation and highly risky operation usually placed at the upstream activities.

2.2 Overview Petrochemical Operations

Usually petrochemical operation divided into two main group which are chemical and polymers where is the most critical operation and highly risky operation usually placed in both activities.

2.3 Risk

Risk as a problem that might cause losses or might threaten the success of a project. Normally in a project, “risk” is a potential problem that will alleviate cost, schedule or technical success that will impact quality of the products [1].

3. Methodology

Apply one of useful method learned though this course i.e. **8RS and 4Ts** and **Risk Matrix** to allocate all listed risk based on their ranking of probability and impact.

- I. **Recognize** or identify all possible risks though brainstorming tool.
- II. **Rating** or evaluation of risk in terms of magnitude and likelihood and create risk profile to record it in risk register.
- III. **Ranking** or analyzing the current level of risk against risk appetite.
- IV. **Responding** to significant risks by applying appropriate actions :
 - a. **Tolerate.**
 - b. **Treat.**
 - c. **Transfer.**
 - d. **Terminate.**
- V. **Resourcing** controls to ensure that adequate arrangement are made to introduce and sustain control activities.
- VI. **Reaction Planning** and/or event management.
- VII. **Reporting** and monitoring risk performance.
- VIII. **Reviewing** the risk management system.

A. Risk identification

No.	List of Risks
1.	Unavailability feedstock supply resulting in operation curtailment.
2.	Improper Inventory management resulting in slowdown/shutdown of plant operation
3.	Reduce in final product netback resulting impacting company financial statement
4.	Increase in feedstock price resulting impacting company financial statement

5.	Lose market share due to new companies produced similar products in the same countries have highest demand
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B. Evaluation/rating risk in term of Probability and Matrix

Risk Ranking			
Risk likelihood	Risk Impact		
	0.8-1.0	0.4-0.79	0.0-0.39
0.75-1.0	High	High	Medium
0.25-0.74	High	Medium	Medium
0.0-0.24	Medium	Low	Low

Initial Risk Assessment

After identify all possible risk, we will evaluate of risk in terms of impact and likelihood matrix by determine the likelihood and impact of each risk and eventually record it in risk register.

Impact: Low = 0 to 0.39, Medium = 0.4 to 0.79, High = 0.8 to 1.0.

Likelihood: Low = 0 to .24, Medium = 0.25 to 0.74, High = 0.75 to 1.0.

No.	List of Risks	likelihood	Impact	Severity
1.	Unavailability feedstock supply resulting in operation curtailment.	0.3	0.7	Medium
2.	Improper Inventory management resulting in slowdown/shutdown of plant operation	0.4	0.6	Medium
3.	Reduce in final product netback resulting	0.5	0.8	High

	impacting company financial statement			
4.	Increase in feedstock price resulting impacting company financial statement	0.6	0.8	High
5.	Lose market share due to new companies produced similar products in the same countries have highest demand	0.6	0.6	Medium

Current Risk Assessment

No.	List of Risks	Probability	Impact	Severity	Responses Plan
1.	Unavailability feedstock supply resulting in operation curtailment.	0.2	0.6	Low	Develop procedure to manage the Unavailability feedstock supply situation
2.	Improper Inventory management resulting in slowdown/shutdown of plant operation	0.3	0.5	Low	Develop procedure to manage the high inventory situation
3.	Reduce in final product netback	0.3	0.5	Low	Implement simulation

	resulting impacting company financial statement				model to optimize prices
4.	Increase in feedstock price resulting impacting company financial statement	0.4	0.4	Low	Work out with expert team in market to acquire better insight
5.	Lose market share due to new companies produced similar products in the same countries have highest demand	0.4	0.2	Low	Being proactive & explore new countries to sell our products

4. Result and Discussion

The last step calculate EVM to allocate realistic budget for risks listed in risk register.

The total potential impact on the plan is **93,000** SR, while the contingency cost is **100,000** SR which is enough to cover impact of potential risks if occur.

No.	List of Risks	Probability	Cost (USD)	Contingency
1.	Unavailability feedstock supply resulting in operation curtailment.	0.2	50,000	10,000
2.	Improper Inventory management resulting in	0.3	60,000	18,000

	slowdown/shutdown of plant operation			
3.	Reduce in final product netback resulting impacting company financial statement	0.3	70,000	21,000
4.	Increase in feedstock price resulting impacting company financial statement	0.4	60,000	24,000
5.	Lose market share due to new companies produced similar products in the same countries have highest demand	0.4	50,000	20,000

5. References

Paul Hopkin (2018). "Fundamentals of Risk Management: Understanding, Evaluating and Implementing Effective Risk Management", 5th edition

B. Boehm, and V.-Basili, "Software Defect Reduction Top 10 List," *Journal Computer*, January, vol. 34, issue 1, pp. 135-137, 2001 [1]