



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

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 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 مبنى 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 الاثار 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..

North Jeddah Bulk Plants Expansion Project

1- HIGH LEVEL PROJECT DESCRIPTION/ INTRODUCTION

The purpose of North Jeddah Bulk Plant Expansion project is to expand the North Jeddah Bulk Plant in support of Saudi Aramco's objective of distributing refined products throughout Makkah province in a cost-effective manner.

The objective of this project is to increase the capacity of North Jeddah Bulk Plant by installing eleven loading bays, three unloading bays and four 500 MB products storage tanks, with all supporting utilities and facilities. In addition, the project will also relocate the access road, the sales and inspection building, the security gate and the staging area to the new location east of the existing NJBP facility.

In this project we will focus on the project risk management which will be described in detail on the next clauses.

2- METHODOLOGY

Project risk is an uncertainty event or condition that if occurs, has a positive or negative on one or more project objectives such as scope, schedule, cost and quality. Many organizations start focusing on the risk management as they aware it is a key of success. The main objectives of risk management are to increase the likelihood and impact of positive events and decrease the likelihood and impact of negative events.

3- PROJECT RISK MANAGEMENT PROCESS

The project risk management includes the processes of conducting risk management plan, identification, analysis, response plan and controlling risks on a project.

The outlines a standard PRM Process adopted by the project is shown in (Figure 1) below.

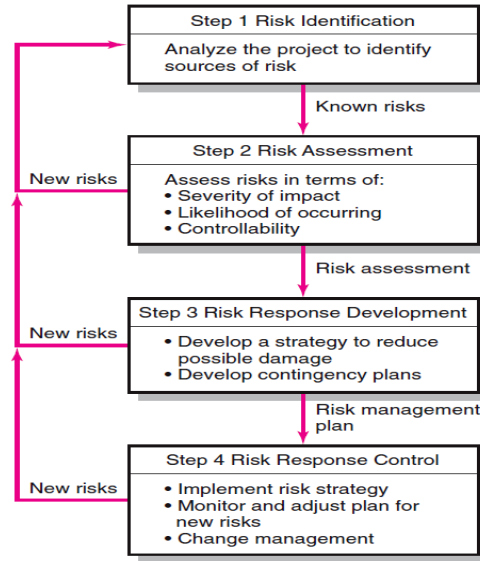


Figure 1. Project Risk Management Process

3.1 PROJECT RISK IDENTIFICATION

In this process will determine which risks may affect the project and documenting it in a list called a **risk register**. There is many techniques may used to great this list such as brainstorming, SOWT analysis, expert judgment...etc.

This activity is an iterative process as shown in Figure 1 because new risk may evolve or become known as the project progresses through its life cycle.

For our project, the risks were identified and presented on Table-1 as this project has many interfaces so many risks are involved.

Table 1: Identified Project Risks

ID	Title	Cause(s)	Event	Impact(s)
1	Schedule alignment with YDH	Due to the large scope and the progress of BI-10-02399, Yanbu Distribution HUB	The NJBP expansion may not be commissioned as scheduled due to lack of product	cost, schedule, not meeting the project objective to meet the customer needs

2	TMS system compatibility	Due to availability of exiting system which become obsolete	The new TMS system may not be compatible with the existing system	Cost, Schedule
3	Jet Fuel offloading skids availability	Offloading skids final specification will not be ready until detail design package submission complete	The Jet Fuel unloading skids may not be expedited	schedule, operation in meeting demand
4	Tank Nozzle installation	Due to Operation requirements the tank may not be possible to be out of service for 1 months	The Tank may not be available to install the new nozzle	cost, schedule, operation

3.2 Project Risk Assessment Matrix

Since the potential risks were identified, now these risks need attention. Hence, a risk matrix will be established showing the risk probability and risk impact, the matrix will have three categories (High = 0.8 to 1), (Medium = 0.4 to 0.79) and (Low = 0.1 to 0.39).

probability	0.8 -1	high	high	medium
	0.4 - 79	high	medium	low
	0.1 to 0.39	medium	low	low
		0.8 -1	0.4 - 79	0.1 to 0.39
		Impact		

Figure 2. Project Risk Assessment Matrix

From above analysis the organization should focus on High (red) and Medium (orange) risks and not on the Low (green) risk.

3.3 Risk Response Development

At this stage we will develop options and actions to enhance the opportunities and reduce threats on project objects. One of the most common way to do so by using the Bow tie diagram (Figure 3).

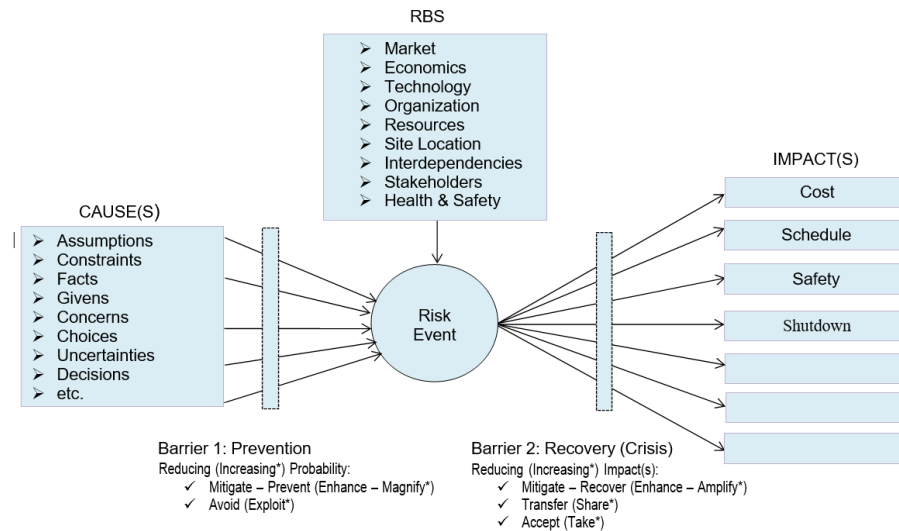


Figure 3. Project Bowtie Diagram

The risk response should be appropriate for the significance of the risk, cost-effective in meeting the challenge, realistic, agreed upon by all parties and owned by responsible person. The table below will give the risk response as well the risk severity.

Table 2: Risks, Risk Ranking, Risk Addressing Actions and Owners

Rank	Title	Owner	Status	Probability	Impact	Description	Current Severity
	1 - Schedule alignmentwith YDH			0.8	1		High
	Action ID – Title	Owner	Status				
	1 – Schedule alignment between YDH & NJBP	FPD –	Active			Follow up with management	

		Bryan				recommendati on in resolving theschedule of YDH & NJBP	
	2 – TMS system compatibility			0.4	0.7		Medium
	Action ID - Title	Owner	Status				
	2-1 - FPD evaluation of the TMS System	Jim	Active			FPD to advise path forward for upgrade or replace the existing TMS system	
	2-2 - Evaluate the TMS compatibility	Tim	Complete d			Evaluate the existing TMS compatibility to the new proposed TMS	
	3 - Jet Fuel offloadingskids availability			0.3	0.2		Low
	Action ID - Title	Owner	Status				
	6780 - evaluate the jet fuel requirements	Allen	Active			management need to evaluate thejet fuel requirements	
	4 - Tank			0.85	0.9		High

	Nozzle installation						
	Action ID - Title	Owner	Status				
	6784 - Tank isolation	Rami	Active			Operation is to isolate the tanks to allow nozzle installation	

Using the probability and impact matrix we will calculate the Expected Monetary Value (EMV) which will show us the impact in terms of cost. (Table 3).

Table 3: Expected Monetary Value Analysis

ID	Risk	Probability	Impact cost (SAR)	Risk Contingency (SAR)
1	Schedule alignment with YDH	0.8	10,000,000.00	8,000,000.00
2	TMS system compatibility	0.4	1,000,000.00	400,000.00
3	Jet Fuel offloading skids availability	0.3	5,000.00	1,500.00
4	Tank Nozzle installation	0.85	15,000,000.00	12,750,000.00
	Total		26,005,000.00	21,151,500

The total potential impact on the project is 26,005,000 SAR, while the contingency cost is 21,151,500 SAR.

4- SUMMARY / CONCLUSION

There are two major concerns:

- The final project scope and the interfaces needs to be frozen to enable the design to progress.
- The risk is mainly impacting Cost & Schedule, but it may have significant impact on product supply if slippage is to occur.

References:

- A guide to the Project Management Body of Knowledge, PMBOK® Guide – Fifth Edition.
- Project Management, The Managerial Process 7E, Erik W. Larson & Clifford F. Gray
- Project Management, A Managerial Approach 7E, Jack R. Meredith & Samuel J. Mantel, Jr.