



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...

Train Shelter Project Risk Identification and Analysis

Introduction

A new challenge awaits the projects team, this would be the first project they handle dealing with live operational tracks. What special risks would the team have to deal and mitigate to deliver the project successfully within budget, quality required and safety requirements. Based on the information the team gathered from the stakeholders and individuals working on the tracks the projects team created an initial risk register for the Project Charter to be completed.

This report will high light the initial risks the project team documented and recorded in their Project Charter. Moreover, the report will discuss some of the risks identified in more details and analyze and illustrate the risk matrix for the project in its initial stages.

Some of the information presented in this report may be different than the actual such as project dates, budget and PMT members due to confidentiality.

Literature Review

“The Institute of Risk Management (IRM) defines risk as the combination of the probability of an event and its consequence. Consequences can range from positive to negative. This is a widely applicable and practical definition that can be easily applied.” (Fundamentals of Risk Management managing, Paul Hopkin). Each risk has its own characteristics that involve different approaches in Fundamentals of Risk Management managing, mitigating and/or analyzing, as per Paul Hopkin the author of Fundamentals of Risk Management, risk is divided into 3 main categories:

- Hazard risk,
- Control risk,
- Opportunity risk.

“It is important to note that there is no ‘right’ or ‘wrong’ subdivision of risks. Readers will encounter other subdivisions in other texts, and these may be equally appropriate. It is, perhaps, more common to find risks described as two types, pure or speculative. Indeed, there are many debates about risk management terminology. Whatever the theoretical discussions, the most important issue is that an organization adopts the risk classification

system that is most suitable for its own circumstances.” (Fundamentals of Risk Management managing, Paul Hopkin).

In reference to the techniques used to carry out risk assessment, the Final Draft International Standard (FDIS) has published a full list of risk assessments techniques that can be used. The below 6 techniques are the most common (Fundamentals of Risk Management managing, Paul Hopkin):

- Questionnaires and checklists,
- Workshops and brainstorming,
- Inspections and audits,
- Flowcharts and dependency analysis,
- HAZOP and FMEA approaches,
- SWOT and PESTLE analysis.

Methodology

The information in this report came firsthand from the project team that undertook the execution of the project; by obtaining information from the team and reviewing the project documentation produced by the Project Management Team (PMT) for this project.

The choice of using direct interviews and reviewing the documentation gives a clearer idea of how the Project Manager (PM) and his team went through the different process of executing this project.

The risk classification matrix shown in the coming section will identify the impact and probability of the risks the project team identified and illustrated in the project charter used to gain the approvals and authorizations needed.

Initial Project Risks			
Sn.	Risk Description	Impact	Likelihood
1	Overrunning the project budget	High	Low
2	Lack of expertise in the market in dealing with live operational rails	Med	Med
3	Delayed train services	High	Low
4	Unknow infrastructural issues	High	High
5	Delays in obtaining the needed permits	High	Med

The information will be ranked as per below information:

1. Likelihood

Score	1	2	3	4	5
Rating	Very Low	Low	Medium	High	Very High

Certainty	<5%	5% - 20%	20% - 50%	50% - 75%	>75%
Frequency	Never Occurred	Once a Year	Less than 3 times a Year	3-4 Times a Year	More than 4 Times a Year

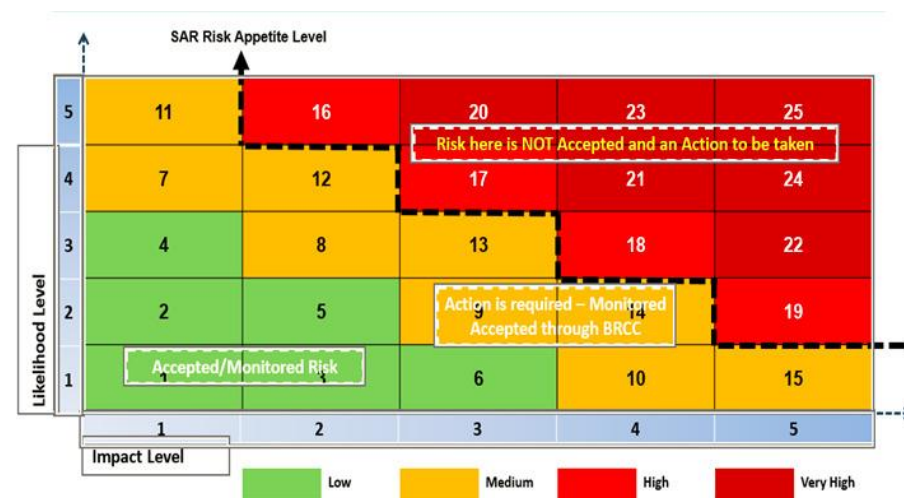
2. Impact Definition

Score	1	2	3	4	5
Rating	Very Low	Low	Medium	High	Very High
Category	<5%	5% - 20%	20% - 50%	50% - 75%	>75%
Financial	< 1,000,000	1,000,000 – 2,000,000	2,000,000 – 10,000,000	10,000,000 – 20,000,000	>20,000,000
Safety	Near miss without injuries	Minor Injuries (First Aid)	Minor Injuries (Hospitalization)	Major injuries	Fatalities
Project	<5% SPI or CPI	5%-10% SPI or CPI	10%-15% SPI or CPI	15%-20% SPI or CPI	>20% SPI or CPI

3. Mitigation Strategy

Mitigation Strategy	
Tolerate / Accept	No action is taken to affect risk likelihood or impact.
Treat / Reduce	Action is taken to reduce risk likelihood or impact or both.
Transfer / Share	Reduce risk likelihood or impact by transferring or sharing a portion of the risk.
Terminate / Avoid	Exit the activities giving rise to risk.

4. Heat Map



Results & Discussion

The initial project risks are a part of the project charter, the information in the table below will be discussed in brief. Moreover, the EMV (Expected Monetary Value) will be calculated for the risks shown below and the risk budget will be discussed:

Initial Project Risks				
Sn.	Risk Description	Impact	Likelihood	Risk Rating
1	Overrunning the project budget	High (4)	Low (2)	8
2	Lack of expertise in the market in dealing with live operational rails	Med (3)	Med (3)	9
3	Delayed train services	High (4)	Low (2)	8
4	Unknow infrastructural issues	High (4)	High (4)	16
5	Delays in obtaining the needed permits	High (4)	Med (3)	12

When dealing with a new activity that has not been undertaken previously by the projects team and/or the engineering team the risks increase as there are no previous experiences that may help guide the team during the scoping process; hence the risks in the above table were chosen by the projects team.

In addition to the fact that this was a first-time project, it interfaced with an ongoing project in the same vicinity, the activities executed by the other project immensely effected the underground utilities for the track area, and due to it being a project under execution there were no as-built drawings that the project team could utilize during the scoping process.

Moreover, the number of contractors in the market that specialize in the railway industry are few which makes it risk bringing new contractors and expect from them the same level of experience of the specialized railway contractors.

Finally, it was evident from the discussions held with the Train Operations Unit that if any incidents happened on site and the tracks were damaged the impact on the services provided to the company's customers may be huge.

Since all these risks were identified early in the project's life cycle, it helped the project team in coming up with propre mitigations that were accepted by the stakeholders.

As an example, the 3rd risk (delayed train services) will be discussed and elaborated on. The triggers for such a delay that were identified in the early stages

EMV for the Risks (EMV = P x IC):

Expected Monetary Value (EMV)				
Sn.	Risk Description	Risk Probability	Cost Impact (SAR)	EMV
1	Overrunning the project budget	0.1	2,350,000	235,000
2	Lack of expertise in the market in dealing with live operational rails	0.5	4,000,000	2,000,000
3	Delayed train services	0.05	15,000,000	750,000
4	Unknown infrastructural issues	0.75	1,000,000	750,000
5	Delays in obtaining the needed permits	0.5	500,000	250,000
Total:			22,850,000	3,985,000

Based on the above table, the potential impact on the project is SAR 3,985,000, which based on the company's risk appetite is acceptable and needs to be monitored by the project team.

Conclusion

This report discussed the initial risks that were compiled by the project team prior to executing the project. Moreover, the expected monetary value of the risks was calculated, and the risk budget was identified.

References

- Train Shelter Project Management Team,
- PMBOK 6th Addition,
- Fundamentals of Risk Management managing, Paul Hopkin,
- <https://library.sacredheart.edu/c.php?g=29803&p=185901> .