



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

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Section

Master

Date

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Course Code

(PMG510)

Project Risk Management

Instructions:

- آخر 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...



A CASE STUDY IN BIOMEDICAL DEPARTMENT IN "SEDER GROUP"

Risk Identification and Analysis

AHMED M. ABDALLA

Project Risk Management PMG510 MPM

Eng. Mosaab M. Hamed

May 15, 2021

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1.INTROD ACTION

1.1 WHAT IS RISK?

We're all faced with risk in our everyday lives. And although risk is an abstract term, our natural human understanding of the trade-offs between risk and reward is pretty sophisticated. For example, in our personal lives, we intuitively understand the difference between a cost that's already been budgeted for (in risk parlance, a predictable or expected loss) and an unexpected cost (at its worst, a catastrophic loss of a magnitude well beyond losses seen in the course of normal daily life). In particular, we understand that risk is not synonymous with the size of a cost or of a loss. After all, some of the costs we expect in daily life are very large indeed if we think in terms of our annual budgets: food, fixed mortgage payments, college fees, and so on. These costs are big, but they are not a threat to our ambitions because they are reasonably predictable and are already allowed for in our plans.

1.2 RISK MANAGEMENT ON PROJECTS

Project risk management is the process of identifying, analyzing and responding to any risk that arises over the life cycle of a project to help the project remain on track and meet its goal. Risk management isn't reactive only; it should be part of the planning process to figure out risk that might happen in the project and how to control that risk if it in fact occurs.

A risk is anything that could potentially impact your project's timeline, performance or budget. Risks are potentialities, and in a project management context, if they become realities, they then become classified as "issues" that must be addressed. So risk management, then, is the process of identifying, categorizing, prioritizing and planning for risks before they become issues.

1.3 RISK IN SOFTWARE DEVELOPMENT PROJECTS

IT projects, especially software developments, are varied in size and complexity. The more complex the project, the higher the risk events may occur during the project life cycle that can have positive or negative effects on a project's objectives. In other words, risk events affect time, cost, scope, and quality of the project outcomes.

Example of risk events are significant changes in scope, performance failure of products produced as part of a project, specific delays in the project due to rejection of work or labor unavailability, litigation against the company, strikes, and so on.

Having risk management mechanisms intact is considered important. Risk management is like a form of insurance; it is an investment. Risk management is concerned with future events/risks in an IT project, particularly in software development projects, whose exact outcome is unknown, and with how to deal with these uncertainties in advance. It is also the art and science of planning, assessing (identifying and analyzing), handling, monitoring, and responding to risk throughout the life of a project and in the best interests of meeting project objectives.

1.4 STATEMENT OF PURPOSE

The purpose of this research is to explain risk management process for Asset management system development project in KAMC, that we already discuss the communication stage of it in the advance project management research, in the hope to reduce the probability of occurrence, minimize potential risks while maximizing potential opportunities, and change the consequences of the risks.

1.5 RESEARCH OBJECTIVES

- a. To be able to identify risk areas that can affect the project success.
- b. To explain risk management process for Asset management system development project in KAMC that can help the project team to minimize potential risks while maximizing potential opportunities.

2. LITERATURE REVIEW

Types of Risks

There are three types of risks that may occur such as known risks, predictable risks, and unpredictable risks (Pressman 2005). Known risks are those that can be uncovered after careful evaluation of the project plan, the business and technical environment in which the project is being developed, and other reliable information sources (e.g. unrealistic delivery date, lack of documented requirements or software scope, poor development environment). Predictable risks are extrapolated from past project experience (e.g., staff turnover, poor communication with the customer, dilution of staff effort as ongoing maintenance requests are serviced). Unpredictable risks can occur, but they are extremely difficult to identify in advance. By identifying known and predictable risks, the project manager takes a first step toward avoiding them when possible and controlling them when necessary. Turban et al. (2008) and Viswanathan (2012) pointed out that the major risks involved in typical IT projects are such as:

- a. scope risks, this risk includes changes in scope usually caused by scope creep wherein the project grows in complexity, integration issues, hardware and software defects as well as change in dependencies.
- b. scheduling risks, Project schedule often gets slip when project tasks and schedule release risks are not addressed properly. This might be due to wrong time estimation, resources are not tracked properly, failure to identify complex functionalities and time required to develop those functionalities, and also unexpected project scope expansions.
- c. resource risks, and This risk mainly arises from outsourcing and personnel related issues. It is believed that bringing in a new worker at a later stage in the project can significantly slow down the project.
- d. technology risks Technical risks generally lead to failure of functionality and performance. Causes of technical risks include continuously changing requirements, no advanced technology available or the existing technology is in initial stages, product is complex to implement, and difficulty in project modules integration.

3.METHADODOLOGY

There is a lot of risk identification methods and many tools and techniques such as:

- Documentation analysis
- Detailed analysis of project objectives
- Control lists based on experience from previous projects.
 - In this project we used brainstorming as simple conversation between all project team members to identify the risks we may face.

4.RESULT and DESCASSIONS

4.1 RISK IDENTIFICATION

In our project developing Asset management system for medical equipment in King Abdullah Medical City in MAKKAH, the project team held meetings for brainstorming as a part of communication plan to list potential causes and scenarios so potential risks can be identified in first place.

List of identified risks:

Count.	Description	Type	Advance project
1	Failure to generate work orders for periodic maintenance in the system	Programmatic Risks	Communication issue because lack of info
2	The location data is incorrect in the system, which causes inaccessibility to the assets	Programmatic Risks	Data missing and poor documentation
3	Pricing on subcontracts based on wrong information	Financial Risk	Cost due to wrong data from ENJAZ system
4	Technical breakdowns in the main server and loss of data	Operational Risks	IT issues *
5	Lack of technical support staff and their experience	Operational Risks	Training

4.2 RISK ANALYSIS

After risk identification process, we should start analyzing the likelihood of each risk and its impact on the project, this is in order to arrange the risks and their priorities to establish the appropriate response plan.

Risk likelihood& impact: the range of risk. 1= lowest, 5=highest.

Count.	Description	Likelihood	Impact	Score
1	Failure to generate work orders for periodic maintenance in the system	5	5	25
2	The location data is incorrect in the system, which causes inaccessibility to the assets	3	5	15
3	Pricing on subcontracts based on wrong information	2	4	8
4	Technical breakdowns in the main server and loss of data	1	3	3
5	Lack of technical support staff and their experience	1	2	2

	SEVERITY →				
LIKELIHOOD ↓	1	2	3	4	5
	Insignificant	Minor	Moderate	Major	Catastrophic

1 Rare 2 Unlikely 3 POSSIBLE 4 LIKLEY 5 Almost certain	1	LOW	LOW 2	LOW 3	MEDIUM	MEDIUM
	2	LOW	MEDIUM	MEDIUM	HIGH 8	HIGH
	3	LOW	MEDIUM	HIGH	HIGH	EXTREME 15
	4	MEDIUM	HIGH	HIGH	HIGH	EXTREME
	5	MEDIUM	HIGH	EXTREME	EXTREME	EXTREME 25

RISK MATRIX

4.3 RISK RESPONSE STRATEGIES

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

Count	Risk	likelihood	Impact	Rating	Response Action	Risk Mitigation
1	Failure to generate work orders for periodic maintenance in the system	5	5	HIGH	Open manually PM work orders and send email to engineers	Set up the plans every quarter and develop it monthly
2	The location data is incorrect in the system, which causes inaccessibility to the assets	3	5	HIGH	Call user to check the right location and update it in ENJAZ system	Full physical new inventory and upload all new data in ENJAZ system
3	Pricing on subcontracts based on wrong information from system	2	4	MEDIUM	Request price change for the asset maintenance and send the right info to the contractor for repricing	Modified data submitted to the contractor to make the right pricing
4	Technical breakdowns in the main server and loss of data	1	3	LOW	Restart the system and send email to ENJAZ team	Backup server in Biomedical department
5	Lack of technical support staff and their experience	1	2	LOW	Training	Training

4.4 EXPECTED MONETARY VALUE (EMV)

One of the tools for quantitative risk analysis is the Expected Monetary Value (EMV) and it used to compare risks in projects.

- P – the probability that the risk will occur
- I – the impact to project if the risk occurs.

Risk	Risk Probability(P)	Cost Impact(I)	Risk Contingency
1	0.5	3000 SR	1500 SR
2	0.3	1800 SR	540 SR
3	0.2	1200 SR	240 SR
4	0.1	500 SR	50 SR
5	0.1	200 SR	20 SR
Total		6700 SR	2350 SR

4.5 CONCLUSION

Risk management is becoming the most challenging aspect of managing software projects. While we can never predict the future with certainty, we can apply a simple and streamlined risk management process to predict the uncertainties in the projects and minimize the occurrence or impact of these uncertainties.

Risk management not only helps in avoiding crisis situations but also aids in remembering and learning from past mistakes. This improves the chance of successful project completion and reduces the consequences of those risks.

5.REFRANCES

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