



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 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 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..

Project Risk Management

1. Introduction

PMBOK Guide defined the project risk management as “project risk management includes the process concerned with conducting risk management planning, identification, analysis, responses, and monitoring and control on a project”. Also, It identified that “the project risk is an certain event or condition that, if it occurs, has a positive or negative effect on a project’s objectives”. Ultimately, the main objective of practicing the project risk management is working towards maximizing the probability and impact of the positive events and minimizing the probability and impact of the negative events (PMI, 2009).

IT industry project have a significant reputation of the high percentage of projects failure. The main reason of this failure is the highly uncertain situations in the early stages of IT projects (Taylor, H. A. & Artman, E., 2014). This research aims to identified risks and perform risk analysis during the initiation phase of ITSM project implementation project.

2. Literature Review

Project is a temporary performed activity with start and end date to provide a unique result or product. During the project, many risks are exposed and need to be managed against financial or legal consequences. Therefore, project risk management activities become an integral part of project management from the early stages to manage the constraints of scope, cost, schedule, and quality and to complete the project successfully (Dandage, R.V. & Mantha, S.S. & Rane, S.B., 2018).

Project risk management is an important activity that should be applied to all projects to have a successful project management. PMBOK Guide defined the project risk as “Project risk is uncertain event that, if it occurs, has a positive or negative effect on a project’s objectives”. The uncertainty can be described as “probability” term and the effect can be described as “impact”. Those uncertain events could have a positive effect or negative effect on a project’s objectives. The earlier the project risks are identified, the more realistic result expected (PMI, 2009).

Risk identification is the first activity need to be performed earlier in the project after planning the project risk and continue throughout the project life cycle. Project identification should be performed with all stockholders. Identified risks are recorded in the Risk register document and stored in the central project server. Once the risks are identified, risk analysis activity will be carried out. Risk analysis used to investigate the impact of the risk event on the project objectives. Then, risk responses are identified the proper actions can be taken to mitigate the risks (PMI, 2009) (Dandage, R.V. & Mantha, S.S. & Rane, S.B., 2018). This research aims to identified risks and perform risk analysis during the initiation phase of ITSM project implementation project.

3. Methodology

the research methodology will be identified the most important risk from the perspective of the experts. Then, risk qualitative analysis will be performed using probability/impact matrix. Then, Expected Monetary Value (EMV) will be calculated as a quantitative risk analysis technique. Finally, risk triggers and responses will be documented for monitoring and control.

Table 1: Risk Rank Category

Color Representation	Rank Classification	Range
	Low Risk	1 - 3
	Moderate Risk	4 - 6
	High Risk	8 - 12
	Very High Risk	15 - 25

Table 2: Risk Probability/Impact Matrix

Probability & Impact Matrix		Probability				
		1- Very Low	2- Low	3- Medium	4- High	5- Very High
Impact	5- Very High	5	10	15	20	25
	4- High	4	8	12	16	20
	3- Medium	3	6	9	12	15
	2- Low	2	4	6	8	10
	1- Very Low	1	2	3	4	5

Table 3: Risk Identification

Risk Identification		
Risk No.	Risk Description	Risk Category
1	Payment Delays by Main Contractor; ACS; to sub-contractor; MIS. This will cause the entire project delay which affects the schedule, stakeholder expectations, human resources assigned.	Source: Financial Risk; Area Affected: Schedule, Human Resource, Stakeholders
2	Subject matters experts leaving the project or KFSH	Source: Technical; Area Affected: Quality, schedule
3	Accuracy of Active Directory	Source: Technical; Area Affected: scope, schedule, Quality
4	Technical Expertise is an unavailable in the functionality of the system	Source: Human Resource Risk; Area Affects: Quality, schedule, scope
5	Lack of project team commitment as their priority will be towards their functional work rather than the project work	Source: Human Resource, Functional Organizational Structure; Affected Area: Schedule, Quality

Table 4: Risk Qualitative Rating

Qualitative Rating				
Risk No.	Probability	Impact	Risk Severity	Risk classification
1	Very High	Very High	25	Very High
2	High	High	16	Very High
3	High	Moderate	12	High
4	Moderate	Low	6	Moderate
5	Low	Very Low	2	Low

Table 5: Risk Quantitative Calculation

Quantitative Calculation			
Risk No.	Probability (P)	Impact (I)	Risk Contingency (EMV= P*I)
1	0,9	SAR 10,000	SAR 9,000
2	0,7	SAR 33,000	SAR 23,100
3	0,7	SAR 25,000	SAR 17,500

4	0,5	SAR 7,500	SAR 3,750
5	0,2	SAR 2,000	SAR 400
Total		SAR 117,500	SAR 53,750

Table 6: Risk Response Strategy

Risk Response			
Risk No.	Risk Response	Trigger	Risk Owner
1	Escalation by project manager to ACS General Manager; followed by escalation from CIO Office to ACS General Manager and arrange for meeting.	If payment is 1 week late after submitting request for payment when a payment milestone is reached	Project manager
2	Move up related activity to the resource up in the schedule as much as possible.	Employee resignation	Project manager
3	Assign someone from Systems Team to be part of the project team and provide deadline for updating active directory	issue already exists and identified	Systems' team representative
4	Project manager will work closely with Enterprise Application Management Department Head to understand the system	ITS Technical lead does not provide requirements of the system and is unable to create WBS and explain to project team	Project manager, Enterprise Application Management Department Head
5	Issue an office memo by the sponsor to assign the resources to the project specifying the percentage of each resource. If resources are still not committed, a request for replacement will be sent.	Task do not get completed in timely manner and as per the deadlines provided.	Project Manager

4. Results and Discussion

Experts identified the 5 most important risks: payment delays to sub-contractor from the main contractor. This will cause the entire project delay which affects the schedule, stakeholder expectations, human resources assigned, subject matters experts leaving the project or the hospital, accuracy of Active Directory, technical expertise is unavailable in the functionality of the system, lack of project team commitment as their priority will be towards their functional work rather than the project work.

The second step applied is the risk qualitative rating using probability/impact matrix of 4 categories: very high risk, high risk, moderate risk, and low risk. Next, Expected Monetary Value (EMV) calculated as a quantitative risk analysis technique with the total of SAR 53,750. Finally, risk triggers and responses are documented for monitoring and control as follow for each project risk mentioned above respectively: escalation by project manager to the main General Manager; followed by escalation from CIO Office to the main contractor General Manager and arrange for meeting, move up related activity to the resource up in the schedule as much as possible, assign someone from systems team to be part of the project team and provide deadline for updating active directory, project manager will work closely with Enterprise Application Management Department Head to understand the system, Issue an office memo by the sponsor to assign the resources to the project specifying the percentage of each resource. If resources are still not committed, a request for replacement will be sent.

5. References

1. PMI (2009). *Practice standard for Project Risk Management: PMI*. Project Management Institute.
2. Taylor, H. A. & Artman, E. (2014). Early risk assessment in IT projects: integrating risk research into project management practice. Paper presented at Project Management Institute Research and Education Conference, Phoenix, AZ. Newtown Square, PA: Project Management Institute.
3. Dandage, R.V., Mantha, S.S., Rane, S.B. et al. Analysis of interactions among barriers in project risk management. *J Ind Eng Int* 14, 153–169 (2018).