



جامعة الجميع الذكية
EVERYONE'S SMART UNIVERSITY

Everyone's Smart University

Project (Spring 2021)

Student Name	Basel Said Al Mostafa	اسم الطالب
Students I.D	2021201504	الرقم الجامعي

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 line spacing 1.5
- 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..

RISK OF BUDGET ESTIMATION FOR CONSTRUCT NEW MALL.

- **Introduction:**

Risk management is the process of defining, evaluating, and controlling threats to organizations. These threats or risks can drive by a diversity of sources, such as financial uncertainty related it opportunity risk, regulation responsibilities related to compliance risk, strategic management mistakes related to control risk, incidents, and natural catastrophes related to hazard risk. by the previous four types of risk in organizations, risk management becomes a top priority for companies. As a result, the risk management process includes company processes to identify and control threats.

Organizations confront unexpected risk events that could cost the company money or cause it to bankruptcy. Risk management helps organizations to prepare for the unexpected by managing risks and save additional costs, by using a risk management plan and become ready for potential events before they happen, an organization can save money and protect its future, this ability to understand and control risk enables organizations to make confident decisions and achieve their goals, by creating a safe and secure working environment for all employees and clients, increases the sustainable pace operations while also minimize legal liability, protection of company, environment, people, and assets from potential harm.

I was assigned to estimate the budget to the bidding of a commercial center that contains a central supermarket and a variety of restaurants, cafes, and various stores that serve the whole family with an entertainment area that includes games for all ages, cinema and many of service offered, the project is unique because it serves an extreme area of the city that is in dire need of that type of project that improves the character and environment of the area. by estimating the budget, I should concern the risk of this estimation and in parallel with the price of the project, must be a contingency reserve available to protect the company and project.

- **Literature Review and Conceptual framework:**

Although a risk contingency reserve is included in any budget estimation, the value is typically repose by regulations and common practices; however, it is inexact. appropriate risk-based budgeting of projects is possible by using the accurate estimation of risk contingencies that results in more competitive bids and more tangible budgets that manufacture a more dynamic framework for the enhance of projects [1].

Decision-making is a core function of project management, such as sourcing selection, and budget allocation are important decisions at the project, there is a persistent need for a project evaluation method that can deal appropriately with risks, contingency reserve helps decisions such as budget optimization [2].

The best methods to accurately the project budget are the contingency reserves for risks, which is the budget for the uncertainty event. it can be divided into preventive and adaptive action by assign risks, types of contingency reserves against risks: is the contingency reserve, and management reserve, the reserves are estimated to cover all risks, the project budget should be estimated the contingency reserve against risks. the cause of cost overruns was inadequate contingency allowance, where a 5% to10% was a usually. However, the actual 17.34% within the range of 15% to 20% recommended by the U.S. [3].

during budget estimating for projects, there are uncertain events, can cause losses through increased costs, time delays, and reduced quality, to avoid any losses that may occur because of uncertain events, it needs to allocate indirect costs, in this case, we call as a contingency reserve. In allocating for that cost, it is important that the estimator have the assessment capabilities, to avoid cost overruns or underrun estimates, to not lose the bid. Contingency reserves are an essential part of the cost estimate used to compensate for uncertainties and risks in the budget phase [4].

- **Methodology:**

Most techniques that used to create a risk register are brainstorming, subject matter experts, checklists, lessons learned, documentation review, SWOT Analysis, Delphi technique, assumptions analysis, and influence Diagrams. and the four ways to risk responses plan are avoiding, transfer, mitigation, accept.

Risk Register									
ID	Category	Risk Description	Effects	Expected Effect Phase	Probability	Impact	Risk Rank	Owner	Risk Response Plan
1	Scope	wrong sequences or wrong overlap of tasks	delay on project delivery	Planning , Executing	0.3	0.8	High	Planing Manager	use strong software to plan, control and monitor
2	HR	unavailable employees	additional cost for part time employees	Planning , Executing	0.2	0.4	Medium	HR Manager	update waiting list for all discipline that can join to work at request
3	Procurement	unsustainable in materials delivery	additional cost for supply from other	Excuting	0.4	0.7	High	Procurement Manager	rent warehouse and kept material till use
4	Contract	Failure to complete contracts	delay on start excuting	Planning	0.1	0.3	Low	Contracer manager	start negotiate during initiation phase for save time
5	Quality	Not approval to outputs and	Inability to close the project	Closing	0.5	0.8	High	Quailty manager	The project is delivered in stages and updating
6	Logistic	unavailable equipment	interruption in project operations	All Phases	0.3	0.5	Medium	logistic manager	Provide two equipment of each required type, one for service and one stand by

Expected Monetary Value (EMV)			
Risk	Probability	Cost Impact	Risk Contingency
1	0.3	SAR 15,000	SAR 4,500
2	0.2	SAR 10,000	SAR 2,000
3	0.4	SAR 20,000	SAR 8,000
4	0.1	SAR 8,000	SAR 800
5	0.5	SAR 22,000	SAR 11,000
6	0.3	SAR 30,000	SAR 9,000
Total		SAR 105,000	SAR 35,300

- **Results and Discussion:**

In conclusion, for megaprojects, it must perform more detailed analyses, the high-risk identification process is essential to professional risk management, the core process of

creating an effective risk register: 1-Risk Identification 2-Risk Analysis 3-Risk Response Plans, in order to ensure previous potential risks are covered the schedule will be increased by the days in a total of EMV and will add the cost in a total of EMV in budget. this amount and days are the ideal contingency, therefore, if you calculated in contingency reserve and add for budget our price will be competitive and easily can get the project, and the company can implement the project with more confidence and client satisfaction for his deliverable project with reasonable price.

practically it is not possible to list all risks to a project there are many variables. But it provides the project manager with a quick and sufficient response when risks are happened. The project risk register will be frequently changing and must be updated to ensure it accurate, however, any time, the new risk may occur and the other risks should be reassigned, whether you're in any phase of the project or any position, can benefit from the use of a risk register.

- **References:**

- [1] Yiannis Xenidis*, Eleftherios Stavrakas, *Aristotle University of Thessaloniki, University Campus, Department of Civil Engineering, Thessaloniki 54124, Greece*, Risk Based Budgeting of Infrastructure Projects, 26th IPMA World Congress, Crete, Greece, 2012
- [2] Tomoichi Sato, *JGC Corporation, 2-3-1 Minato Mirai, Yokohama 220-6001 Japan*, Risk-based project value – the definition and applications to decision making, 27th IPMA World Congress
- [3] Hyukchun Kwon¹ and Chang Wook Kang¹, Improving Project Budget Estimation Accuracy and Precision by Analyzing Reserves for Both Identified and Unidentified Risks 2019 Project Management Institute, Inc. Project Management Journal
- [4] Anita Rauzana, *Department of Civil Engineering, Syiah Kuala University, Jl. Syech Abdur Rauf No. 7, Banda Aceh 23111, Aceh Province, Indonesia*, Uncertainty Variables on Cost Estimation in Project Construction, (January. 2018) *IOSR Journal of Business and Management (IOSR-JBM)*

- **Appendices:**