



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:

- 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 إدارة المخاطر المناسبة لكل خطر على حدة.

من محتويات المقرر والمصادر الأخرى المتاحة أصبحت تعلم الآن أن الغرض العام لمرحلة التخطيط للمخاطر هي توقع أحداث المخاطر المحتملة والتجهز لاتخاذ ردة الفعل المناسبة عند وقوع الخطر - لمنع أو تقليل الآثار 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..

## **The project is to Build Plastic factory**

### **1.Introducton**

#### **Advanced project management**

Advanced project management is the monitoring, implementation, planning and preparation of a unified work for a team to achieve desired goals and reach a specific measure of success within a specific time frame. The important issue in managing advanced projects is the implementation of all project objectives within the scope of available restrictions and regulations, and these limitations include / project scope - and duration Project timelines and quality and budget As for the most important, complex and difficult challenge, it is represented in distributing the inputs in the most appropriate manner and using them to achieve the previously drawn goals.

and the planning stage of the project aims to reach the most important documents for the project, which express the basic reference for all that has been unanimously agreed upon for the project in general and the planning stage includes to ensure the alignment of the elements, time, cost, and resources needed with the pace of work to be completed, in parallel with estimating the generally accepted risk elements. Project planning and design includes the following points.

1.2 Often times, the means of control may not lead to complete protection, so that some danger resulting from the work environment, the nature of the device, or even the capabilities of the workers in this case must be dealt with through good risk management and close monitoring, as well as resorting to other types of control methods. Such as administrative tools Administrative Controls and protective clothing, as well as changing the way of working in a safer way, and that facilitates that.

1.3 The risk identification process is the first step towards a solution, and it is a diagnosis of all the expected challenges of inflicting harm and identifying the risks. It includes the effort of a team that has experience and knowledge of the business and the risks involved in this phase. The workers exposed to risks must be involved in discovering them and contribute to the search for solutions with specialists in occupational safety and health The role of occupational safety and health is to train and educate participants to carry out work while monitoring their application to work and giving directions.

### **2. LITERATURE REVIEW**

2.1 Project risk management demonstrates the value of proactive planning for projects as a way to anticipate and mitigate serious issues that could adversely affect the project during and at some point in the future (Atto 1997:4; Williams 1995:23; Pinto 2007:237; Mir and Pinnington 2014:204). Risk management process will, therefore, require the project members to become the devil's advocates during the entire project cycle, because in the wording of the old age "an ounce of prevention is worth a pound of cure."

Having provided a brief discussion of the concept of risk and risk management, the article examines the factors that made the institutional project management risky.

2.2 To conduct RI efficiently, primary project documentation must be in place. The project charter, scope statement, and project management plan (Including the Work Breakdown Structure) need to be available to build an exhaustive list of risks. Without these elements as a frame of reference, it is difficult to assess the risks on a project effectively. The RM plan and the organizational atmosphere also must be undoubtedly understood to carry out RI. These form the environment in which the risks will be evaluated. The RM plan may also identify specific RI practices which are either favoured or banned by the organization as part of their risk culture. According to Kuang (2011), all this information can encourage thinking about different risk issues and concerns when evaluated using the tools and techniques of RI. The tools and technology that are employed in RI are as varied as the projects they serve. Nevertheless, some groups of tool and technique types are most frequently used.

2.3 Owners usually need to have an accurate early cost estimate for their projects in order to provide sufficient budget for projects. Risks and uncertainties associated with a project are impediments to reach an accurate cost estimate. For instance, nearly 50% of the large active transportation projects in the United States overran their initial budgets (Sinnette 2004). To overcome the cost overrun issue, identifying project risk factors and cost escalation factors have been the subject of much research (Shane et al 2009). To absorb the cost impact of these risk factors, a contingency budget is added to the total project budget. This means that a total cost of project is broken down to: (1) base cost, and (2) contingency cost. Base cost is the cost of project which is not including contingency (Touran 2006). These are certain cost items of a project with a given scope necessary to physically deliver the project. Contingency is defined as a reserve budget for coping with risks and uncertainties and to help keep the projects on budget. Contingency is traditionally estimated as a predetermined percentage of project base cost depending on the project phase. In recent years, some agencies have started conducting formal probabilistic risk assessment to estimate contingency budget rather than deterministic approach (Touran 2010).

3.METHODOLOGY This paper takes a positive view that there can be an important and interdependent relationship between measures of project planning and the overall success of the project. The planning stage needs to study the risks of climate change, technological changes, changes in government policy, changes in economic factors, changes in consumer tastes, changes in human and material resources, and the planning process includes setting goals, studying changes in environmental factors, approving and adopting plans and following up Plans, plans monitoring and evaluation.

## Identifying risks;

| DESCRIPTION     | RISK |   |    | Determining prevention and response                                                                                                                                                                                                          |
|-----------------|------|---|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 |      |   |    |                                                                                                                                                                                                                                              |
| Physical risk   | 3    | 2 | 6  | Appointing a radiation monitor in order to be able to identify radiation violations, know their types and work to reduce the rate of increase of these violations                                                                            |
| Chemical risk   | 3    | 5 | 15 | Immediately notify others who work in the same place of the chemical danger, wear the necessary personal protective equipment, put a warning tape and barriers, and put any injured person under the shower for a period of 15 to 20 minutes |
| Mechanical Risk | 3    | 4 | 12 | Preventing contact with the moving part and protection from falling objects. The protection device should not create any new hazards, and the protection device must not create any interference or conflict                                 |

|                             |   |   |   |                                                                                                                                                                                                                                                                                                  |
|-----------------------------|---|---|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Biological Risk             | 1 | 3 | 3 | Primary medical examination and periodic medical examination, preserving the safety and cleanliness of the environment Protection and prevention of exposed workers, health education and prevention, and provision of personal protective clothing and equipment to reduce biological exposures |
| Fire Risk                   | 2 | 4 | 8 | Rescue the injured, activate the alarm system, and communicate with the control room and closing the fire-resistant doors to contain the fire and prevent its spread to another place, and finally evacuating and extinguishing the fire                                                         |
| The danger of medical waste | 2 | 3 | 6 | The use of bags designated for each type of waste and waste bags should not be moved by hand through the corridors until they are torn apart. Waste should not be stored in open spaces, and waste collection centers must be kept away from food                                                |

|  |  |  |  |                                        |
|--|--|--|--|----------------------------------------|
|  |  |  |  | stores, the<br>restaurant, the kitchen |
|--|--|--|--|----------------------------------------|

| Risk probability       | Risk severity  |             |         |         |              |
|------------------------|----------------|-------------|---------|---------|--------------|
|                        | Catastrophic 5 | Hazardous 4 | Major 3 | Minor 2 | Negligible 1 |
| Frequent 5             |                | 12          |         |         |              |
| Occasional 4           |                |             |         |         |              |
| Remote 3               | 15             |             |         |         |              |
| Improbable 2           |                | 8           | 6<br>6  |         |              |
| Extremely improbable 1 |                |             | 3       |         |              |

EMV:

| No: Risk | p   | I    | EMV  |
|----------|-----|------|------|
| 1        | 30% | 2000 | 600  |
| 2        | 30% | 5000 | 1500 |
| 3        | 30% | 4000 | 1200 |
| 4        | 10% | 3000 | 300  |
| 5        | 20% | 4000 | 800  |
| 6        | 20% | 3000 | 600  |

Total EMV = 5000

Here we will calculate the EMV cost for our project. All the numbers you will see are not an accurate cost but have been evaluated based on experience, the total potential impact on the plan is 21,000 SAR, while the contingent cost is 5000 SAR.

#### 4.RESULTS AND DISCUSSION

Project risk analysis and management is an ongoing process that can begin at any stage of the project cycle and can continue until the costs of its use become more than the potential benefits that can be obtained. The project progresses, the risks decrease, and thus the effectiveness of using risk analysis and management tends to diminish so it is advisable to use it in the early stages of the project life cycle. No project has no risks, but all projects have risks, and analyzing these risks after identifying them and then managing them is an integral part of project management, and without that the project is subject to failure

#### 5.REFERENCES

<http://www.creativehrd.com/Course-Details/1888/Advanced-Project-Management-%D8%A5%D8%AF%D8%A7%D8%B1%D8%A9-%D8%A7%D9%84%D9%85%D8%B4%D8%B1%D9%88%D8%B9%D8%A7%D8%AA-%D8%A7%D9%84%D9%85%D8%AA%D9%82%D8%AF%D9%85%D8%A9>

<http://dr-ama.com/?p=1527>