



جامعة الجميع الذكية  
EVERYONE'S SMART UNIVERSITY

## Everyone's Smart University

### Project (Spring 2021)

|              |                         |               |
|--------------|-------------------------|---------------|
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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..

## Project Risk Probability and Impact

### Part I: Risk probability impact matrix

#### Identification and Formulation of Risks

Low:

1. Delay in the disbursement of funds (5%), trivial effect
2. The rise in the cost of the international flight (7%), minor
3. One or more workers may sustain an injury during installation (9%), moderate
4. Some laptops may not be operational (27%), trivial

Medium:

5. Some of the team members may not turn up (58%), moderate
6. Delaying in finding the best manufacturing company and negotiating the deal (60%), major
7. Custom tariffs may be raised (65%), moderate

High:

8. Delay in communication among team members during shifts and delays (87%), major
9. Some laptops may get damaged during shipping (95%), adverse

| Probability<br>of Risks | Impacts of Risks |         |       |          |       |         |
|-------------------------|------------------|---------|-------|----------|-------|---------|
|                         |                  | Trivial | Minor | Moderate | Major | Adverse |
|                         | 0-20%            | 1       | 2     | 3        | 0     | 0       |
|                         | 21-40%           | 4       | 0     | 0        | 0     | 0       |
|                         | 41-60%           | 0       | 0     | 5        | 6     | 0       |

|  |         |   |   |   |   |   |
|--|---------|---|---|---|---|---|
|  | 61-80%  | 0 | 0 | 7 | 0 | 0 |
|  | 81-100% | 0 | 0 | 0 | 8 | 9 |

Fig 1: Risk Probability Impact Table

| Risk | Probability | Impact (\$)   | EMV<br>(Probability*Impact) |
|------|-------------|---------------|-----------------------------|
| 1.   | 5%          | -900          | -45                         |
| 2.   | 7%          | -1,500        | -105                        |
| 3.   | 9%          | -3,000        | -270                        |
| 4.   | 27%         | -1,000        | -270                        |
| 5.   | 58%         | 3,000         | 1,740                       |
| 6.   | 60%         | 7,000         | 4,200                       |
| 7.   | 65%         | -2,500        | -1,625                      |
| 8.   | 87%         | 7,000         | 6,090                       |
| 9.   | 95%         | 10,000        | 9,500                       |
|      |             | <b>18,100</b> | <b>19,215</b>               |

Fig 2: Risk Probability and Impact Table

## Part II: Risk Analysis

Delay in finding the best manufacturing company and negotiating the deal causes inconvenience. The timeline for finding the laptop manufacturing company is seven days, but this may be delayed because team members are divided when it comes to the "best" manufacturing company. Even after settling on the company to supply the laptops, there is no

guarantee that the deal shall be sealed within the five-day time frame as indicated in the project milestone schedule. This risk is identified when members are divided on laptops' best brand to buy and when the manufacturer is not readily available for talks over the deal. In a bid to prevent the risk of delays over the "best" brand, random numbers will be assigned to all the enlisted brands, and a random number generator used to select the final brand. To avoid delays in sealing the deal, the team members can meet with a company's local agent.

Delay in the disbursement of the funds may delay the ordering of the laptops. Since there is a lot of procedures before sending the money, there are likely to be delays. Several key business administrators are expected to sign the form before remitting the funds. The presence of long procedures in the processing of the funds is the best means of identifying the risk. To avoid such delays, the team members will start processing the forms early.

The cost of international flights may arise during the period, thereby increasing the process's total cost. Factors that may increase travel costs include an increase in jet fuel price, timing of the flights, flight distance, ancillary fees, and airfare (Parrella 12). All these factors are avoidable except the price of oil. In a bid to use less money on air travel, only a few members will fly out of the country, and they will book flights during the off-peak when there is less demand. There will be an allocation of emergency travel funds to cater to the uncertainties due to fluctuations in jet fuel price.

Some laptops may get damaged during shipping, leading to unnecessary losses. Poor packaging, improper cargo handling, and poor road transport increase the risk of damages during shipping. The risk of damage is identified when the computers are packed in a weak container, say carton, or in a rough material such as steel containers. Cargo handlers may equally mishandle the cargo at the airport, causing chances of damage. Corrugated cardboards and paperboards help

store the laptops before they can be packed inside a shipping container. During road transport, the cargo will be ferried by a fitted vehicle that does not cause the load's unnecessary movement.

Some of the team members may not turn up, causing acute labor shortages and delays. All team members for the project are cooperative and will unlikely fail to attend to their duties during the implementation process. Unfortunately, one or a couple of them may have an emergency duty to attend to, thereby causing labor shortages and delays. To identify such risk, the team members will frequently communicate to ascertain that all members will carry out their duties. Extra team members will be trained to substitute the regular team members should one or many of them have an emergency.

Customs tariffs may be raised during the importation causing an anticipated budget constraint. Due to factors such as the general economic situation, trade laws, quantitative barriers, and general policies regarding international trade, the amounts of customs duties charged when jetting into the country may increase (Keen). To prevent such a risk, the project team members will visit the customs duties offices to know the number of duties paid during the importation.

One or more technicians may suffer an injury during installation, thereby delaying the process. It is expected that all members will be in good health throughout the project. However, the installation process involves heavy duties that may cause injury to some members. An example of such injuries is electric shocks during the connection of the devices. Although accidents come without warning, taking precautions serves to ensure the security of the members installing the computers. Such measures include switching off power when necessary and only opening it when testing the connections.

Some laptops may not be operational and will require a warranty, causing delays in the other subsequent activities; payment by the school and preparation of the stakeholders' report. The steps in the manufacturing and transportation of the laptops may damage some computers, thereby making them nonoperational. Delays may occur when solving the problem. To avoid such delays, the team members that will fly out of the country will first verify that all the computers are in good condition before shipment. Transportation will equally be done carefully to avoid damages.

Delays in communication among teams during shifts and inconveniences may worsen the situation further since it will take a long time to solve. Some team members may encounter problems, but they may not communicate earlier due to fear of being blamed. The situation may get worse if left unsolved, causing more problems to the project. In a bid to such risk, the team members will be encouraged to speak out should anything go a mess. This way, a solution will be arrived at in real-time.

### **Part III: Expected Monetary Value for Risks That Impact Cost**

$EMV = \text{Probability of the peril (P)} * \text{Impact of the peril (I)}$  or simply written as  $EMV = P * I$

$EMV \text{ for international flights} = 0.07 * (-\$1500) = -\$105$

$EMV \text{ for custom tariffs} = 0.6 * (-\$2500) = -\$1,500$

## Works Cited

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