



جامعة الجميع الذكية  
EVERYONE'S SMART UNIVERSITY

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## 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:

- 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 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..

## ***Nurse Call System Project***

During COVID -19, projects became difficult to process; especially projects are related to patient service. I assign to be a projects manager for a project related to patient service. This project for a device that can call the nurse to asset patient's room. It was a difficult project that I ever had because it was during COVID-19 and it is relate to patient safety. Before we start the project, challenges might happen during the project and it has to be closed on deadline with low risk or zero. This kind of project must to be planned in prompt way with .This research is going to represent the risks that we faced during the project, however some of the we did not expect to happened because COVID-19 is kind of a new risk that anyone might do not have experience to handle the situation.

In this research, I'm going to explain the risks that we planned to might have in the project and as I mention before we did not expect the risks as we are going through the project.

### ***Methodology***

| No. | List of Risks                                                                   |
|-----|---------------------------------------------------------------------------------|
| 1   | Installation of the devices ( <b>it might take time during COVID-19</b> )       |
| 2   | Installation of the Software ( <b>we might have an issues with software</b> )   |
| 3   | Choose a unknown switches( <b>it might cost a bad network connection</b> )      |
| 4   | Project get delay during COVID-19 ( <b>rooms got covid-19 patient</b> )         |
| 5   | Going inside patients who got infected COVID-19( <b>not safe for workers</b> )  |
| 6   | Workers get COVID-19 during the project ( <b>it might delay work schedule</b> ) |
| 7   | Devises and software get delay from the vendor during COVID-19                  |
| 8   | Devices might shutdown from the electricity ( <b>device will shut down</b> )    |

As in shown in figure 1 these the risk that we discuss during the project and we might face these risks. After that, we went to find the probability and the impact of each risk to define how the risks that has high-medium-low rates of probability and impact of the risk as well.

| Relative | Rates     | Risk Range | Description of the Relative      |
|----------|-----------|------------|----------------------------------|
| High     | 0.6 - 0.9 | 0 - 0.72   | Risk is not acceptable to happen |
| Medium   | 0.3 - 0.6 | 0 - 0.52   | Possible to happen               |
| Low      | 0.1 - 0.3 | 0 - 0.32   | High rate it will not happen     |

Now we can define the possibly of each risk and how is the impact it might occur during the project.

| No | List of Risks                                                                | Probability | Impact |
|----|------------------------------------------------------------------------------|-------------|--------|
| 1  | Installation devices ( <b>it might take time during COVID-19</b> )           | 0.3         | 0.6    |
| 2  | Installation Software ( <b>we might have an issues with software</b> )       | 0.4         | 0.3    |
| 3  | Choose a unknown switches( <b>it might cost a bad network connection</b> )   | 0.4         | 0.8    |
| 4  | Project get delay during COVID-19 ( <b>rooms got covid-19 patient</b> )      | 0.6         | 0.9    |
| 5  | Going inside patients rooms ( <b>it might annoying the patient</b> )         | 0.5         | 0.7    |
| 6  | Workers get COVID-19 during the project ( <b>Workers safety</b> )            | 0.8         | 0.9    |
| 7  | Devices and software get delay from the vendor during COVID-19               | 0.7         | 0.8    |
| 8  | Devices might shutdown from the electricity ( <b>device will shut down</b> ) | 0.5         | 0.9    |

As we define the risks value for the probability and impact during the project and have all the information we need to find a solution and the respond for each risk so we can prepay for the risks. There are methods that we will get the respond results and it is helpful to evaluate the severity. We will used the bow -Tie and risk matrix. This will be to find the final risk as the equation shown below:

$$\text{Risk} = \text{Probability} \times \text{Impact}$$

|             |                              |              |                 |               |
|-------------|------------------------------|--------------|-----------------|---------------|
| Probability | HIGHLY OCCUR (0.6-0.9)       | MEDIUM       | HIGH            | HIGH          |
|             | MIGHT OCCUR (0.3-0.6)        | LOW          | MEDIUM          | HIGH          |
|             | INPOSSIBLE TO OCCUR(0.6-0.9) | LOW          | LOW             | MEDIUM        |
|             |                              | LOW(0.6-0.9) | MEDIUM(0.6-0.9) | HIGH(0.6-0.9) |

#### IMPACT

| No | List of Risks                                              | Probability | Impact | Severity | Plan Solution                                        | Action                                                            |
|----|------------------------------------------------------------|-------------|--------|----------|------------------------------------------------------|-------------------------------------------------------------------|
| 1  | Installation devices ( it might take time during COVID-19) | 0.3         | 0.6    | LOW      | We make a schedule for each room to finish per a day | We will install the devices in control room not in patient's room |

|   |                                                                            |     |     |        |                                                                               |                                                                                                     |
|---|----------------------------------------------------------------------------|-----|-----|--------|-------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
|   |                                                                            |     |     |        |                                                                               |                                                                                                     |
| 2 | Choose a unknown switches( <b>it might cost a bad network connection</b> ) | 0.4 | 0.8 | MEDIUM | We will use the same brand that we have already installed in our systems      | We will search different brand with same configurations that we already know and same settings      |
| 3 | Installation Software ( <b>we might have an issues with software</b> )     | 0.4 | 0.3 | LOW    | Make a side survey and try a sample device for each patient's room            | Use the manual option for the system it can be work without the software until we solve the problem |
| 4 | Project get delay during COVID-19 ( <b>rooms got covid-19 patient</b> )    | 0.6 | 0.9 | HIGH   | We will ask the nursing department so, the can swap the patient in other room | We will finish only the room does not have COVID -19 patient                                        |
| 5 | Going inside patients rooms( <b>it might annoying the patient</b> )        | 0.5 | 0.7 | MEDIUM | We might use the noisy machine during morning time we patient outside         | We will wait until the patient recover and work in that room                                        |

|   |                                                                         |     |     |        |                                                                                                                    |                                                                                 |
|---|-------------------------------------------------------------------------|-----|-----|--------|--------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
|   |                                                                         |     |     |        |                                                                                                                    |                                                                                 |
| 6 | Workers get COVID-19 during the project ( it might delay work schedule) | 0.8 | 0.9 | HIGH   | We take the precautionary measures for workers and install the device                                              | We will have a replacement workers if not we will wait until the worker recover |
| 7 | Devices and software get delay from the vendor during COVID-19          | 0.7 | 0.8 | MEDUIM | For the software, it will be through online with contractor. Send the and devices through local delivery Companies | Use the local device they have stock until we got the other devices             |
| 8 | Devices might shutdown from the electricity ( device will shut down )   | 0.5 | 0.9 | MEDUIM | Use UPS batteries which will provide a power during such down                                                      | Use a charger batteries for the network switches and server devices             |

## Result and dissection

As the result of the project we can the different cost when we calculate the EMV. In this project, it cost around 100000 Riyals any delay it will cost a lot in the plan the values it will be most likely close the real amount. The total impact is 100000 the risk contingency is about 57500 SR as shown below on table.

| No | List of Risks                                                                | Probability | Impact Cost | Risk Contingency |
|----|------------------------------------------------------------------------------|-------------|-------------|------------------|
| 1  | Installation devices ( <b>it might take time during COVID-19</b> )           | 0.3         | 10000       | 3000             |
| 2  | Installation Software ( <b>we might have an issues with software</b> )       | 0.4         | 10000       | 4000             |
| 3  | Choose a unknown switches( <b>it might cost a bad network connection</b> )   | 0.4         | 0           | 0                |
| 4  | Project get delay during COVID-19 ( <b>rooms got covid-19 patient</b> )      | 0.6         | 30000       | 18000            |
| 5  | Going inside patients rooms ( <b>it might annoying the patient</b> )         | 0.5         | 5000        | 2500             |
| 6  | Workers get COVID-19 during the project ( <b>Workers safety</b> )            | 0.8         | 5000        | 4000             |
| 7  | Devises and software get delay from the vendor during COVID-19               | 0.7         | 30000       | 21000            |
| 8  | Devices might shutdown from the electricity ( <b>device will shut down</b> ) | 0.5         | 10000       | 5000             |
|    | <b>Total</b>                                                                 | 0           | 10000 SR    | 57500 SR         |

## **Conclusion**

The global pandemic Covid-19 make the world in financial crisis. Most of the project are canceled or delayed in other time. Our project cannot be delay or cancel it must to be continuo for any circumstances because the project is related to patient safety and that is very important that project continuo and finish on time. For that reason, we decided to complete the project with less risks. We faced uncertainty risk that we did not expect such as Covid-19. The risks such as, install the software, civil works to install the device in each patient's room were so complicated during our project and it consider as a high risk for the project plan and workers. In the end of the project I learned a lot from the risks in a sensitive project that relate to patient. Uncertainty risks make the project complicated like Covid-19 but, there is a solution for any risk if we have a good communication.

## **Reference**

***Fundamentals of Risk Management: Understanding, Evaluating and Implementing Effective Risk Management by Paul Hopkin***