



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 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.

سنقوم 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..

## Probability/impact matrix

The probability/impact matrix refers to the table showing level of risk representing the probability of occurrence of risk and the impact of each risk as compared to one each other (Dumbravă and Iacob, 2013). The figure below provides the probability/impact matrix to determine at which level risk presents for the project.

|             |        |        |        |      |
|-------------|--------|--------|--------|------|
| Probability | High   | 3      | 6      | 9    |
|             | Medium | 2      | 4      | 6    |
|             | Low    | 1      | 2      | 3    |
|             |        | Low    | Medium | High |
|             |        | Impact |        |      |

In probability, 1 refers to the low risk, 2 refers to the medium probability, and 3 refers to high probability of occurrence. Meanwhile, in impact factor, 1 refers to the lower impact, 2 refers to the medium risk and 3 refers to the high risk (Gordon and Hayward, 1968). The score or level of risk has been determined by multiplying the probability with the impact. Furthermore, eight risks have been identified from the Advanced Project management APM course and the impact in terms of level of risk and impact in terms of expected monetary value has been calculated as follows

| Risks                      | Risk Level |        |      | Expected Monetary Value(EMV) |           |           |
|----------------------------|------------|--------|------|------------------------------|-----------|-----------|
|                            | Prob.      | Impact | Risk | Prob.                        | Impact    | Risk      |
| Lack of Commitment         | 2          | 3      | 6    | 67%                          | \$ 50,000 | \$ 33,333 |
| Ineffective Communication  | 1          | 2      | 2    | 33%                          | \$ 30,000 | \$ 10,000 |
| Insufficient Training      | 2          | 2      | 4    | 67%                          | \$ 20,000 | \$ 13,333 |
| Unable to get user support | 2          | 2      | 4    | 67%                          | \$ 10,000 | \$ 6,667  |

|                                          |   |   |   |      |              |              |
|------------------------------------------|---|---|---|------|--------------|--------------|
| Inter-departmental Conflicts             | 3 | 3 | 9 | 100% | \$<br>80,000 | \$<br>80,000 |
| Misconceptions on change of requirements | 2 | 2 | 4 | 67%  | \$<br>35,000 | \$<br>23,333 |

It is evident from the probability/impact matrix that there are two risks; lack of commitment and inter-departmental conflicts which poses a high level of risk, and there are three risks; insufficient training, unable to get user support and misconception on change of requirements. However, there is only one risk which falls under the low risk category and it is ineffective communication. Furthermore, the potential impact in terms of expected monetary value (EMV) has also been calculated for each of the risk.

### Description and Potential Impacts

| Risks                     | Potential Impacts                                                                                                                                                                                                                                                                         |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lack of Commitment        | The lack of commitments within the team members tend to affect overall project's implementation. Therefore, there is higher impact on this that loss would be higher since lack of commitment could increase the cost of project significantly.                                           |
| Ineffective Communication | The ineffective communication would create discrepancy what stakeholders want from implementation of project and what project manager and team has been trying to achieve.                                                                                                                |
| Insufficient Training     | The lack of training could emerge as the insufficient training could further require company to expense on the training and development of the employees as to allow them to effectively utilize the ERP. Therefore, the risk of insufficient training and ineffective training prevails. |

|                                          |                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unable to get user support               | There is also risk of not getting the user support from the ERP design given the fact that at certain movement, busy schedule and lack of coordination could lead to this risk. However, impact of this risk not significant but rather remains medium and probability also remains medium.                                                                                                                           |
| Inter-departmental Conflicts             | The implementation of the ERP does not centralize the operations but conflicts within the departments also tend to emerge due to fact that departments would be required to remain interacted and coordinate with each other with respect to effective implementation. However, it is not the case that all departments would be agree with each other over every point. Hence, the risk also remains in this aspect. |
| Misconceptions on change of requirements | The misconception tend to prevail due to ineffective communication within the stakeholders and project manager and team. This misconception is more related to change of requirements, where change of requirement by the stakeholders may be communicated in way but the project manager and team may perceive it in another way.                                                                                    |

## Indicators and Triggers

The most important sources of indicators and triggers which could identify the bottlenecks and the operational inefficiencies in the project of ERP system implementation by the Brazilian government were plenty. Amongst the major indicators were the deviation of key performance metrics of the system from the benchmarked values. The benchmarked values pertaining to the installation gave a profound insight into how the ERP system was actually required to perform and how it could ultimately result in operational efficiencies throughout the public services. Any deviation from the

benchmark values would ultimately signal the lack of performance of the ERP system and hence, would ultimately result in the overall performance inefficiency of the system.

On the other hand, the potential risk of the failure of the ERP system to operate in the public sector would be triggered and intensified if the employees of the public sector of the Brazilian government were not trained adequately to get their hands on the system. As per contemporary research, there is always a need for training the employees in any given sector - whether private or public - on the newly installed ERP system. If the employees are not trained adequately, the ERP system might not as well be utilized to full capacity and to its full potential.

### **Specific Risk Response Strategies**

As per the objectives of this project that were highlighted in project a, training of the employees was one area which was specifically made an objective of the project. If the employees are not trained properly, the ERP system that is newly installed in any given sector and in any given industry is bound to fail. Hence in order to avoid this risk of failure of the system installation, the risk mitigation strategy is to train the employees but more important than that, a continuous system of feedback must be incorporated in the overall mechanism so that the administration knows how well the employees are currently perceiving the ERP system and how familiar they have become over the course of action.

In this connection, for the project under discussion, the training of the employees was made a mandatory part of the overall set of objectives of this project. It was also included in the overall scope of the project so that there was no escape and there was no chance of failure. The training regime that was developed for the purpose of training to employees on the newly installed ERP system was very informative and sophisticated and it was naturally based on the guidelines issued by PMBOK.

## References

- Dumbravă, V. and Iacob, V.S., 2013. Using probability–impact matrix in analysis and risk assessment projects. *Descrierea CIP/Description of CIP–Biblioteca Națională a României Conferința Internațională Educație și Creativitate pentru o Societate Bazată pe Cunoaștere–ȘTIINȚE ECONOMICE*, 42.
- Gordon, T.J. and Hayward, H., 1968. Initial experiments with the cross impact matrix method of forecasting. *Futures*, 1(2), pp.100-116.